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ABSTRACT

The purpose of this dissertation is to identify the instructional goals of faculty who teach in the web-based environment and compare those to the goals of faculty who teach traditional, face-to-face course. Study participants were faculty members from two year public community colleges in Florida and the data was collected via a website that hosted the Teaching Goals Inventory (TGI). Faculty was divided into three groups based upon experience in teaching online courses and then matched on discipline. The study found definite preferences among faculty who teach traditional and web-related courses and that teaching in a web-based environment has an affect on their instructional goals. The study concludes that the findings in the report are significant and that they can lead to considerable improvements in overall teaching effectiveness. Further studies need to be completed on this topic because solely based upon the findings in this study, it is difficult to ascertain whether the effects on the teaching goal among the groups of faculty were influenced by the technology of the web-base setting or by the fact that faculty needed to readjust their teaching styles to accommodate a change in the learning environment. Contains 3 appendices and 96 references. (MZ)

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THE FLORIDA STATE UNIVERSITY

COLLEGE OF EDUCATION

FACULTY TEACHING GOALS IN THE ONLINE ENVIRONMENT

BY

KIMBERLY A. HARDY

A Dissertation submitted to the
Department of Educational Leadership and Policy Studies
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

Fall Semester, 2002

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TABLE OF CONTENTS

- List of Tables viii
- List of Figures ix
- Abstract x

- I. INTRODUCTION 1
  - Teaching Goals and Classroom Assessment 3
  - Web-based Instruction 5
  - Purpose 8
  - Conceptual Framework 10
  - Definition of Terms 11
  - Significance 11
  - Delimitations of Study 13

- II. REVIEW OF LITERATURE 14
  - Classroom Research 15
    - The Evolution of Classroom Research and Assessment 17

      - Lowman's Two-Dimensional Model
      - Seven Principles of Good Practice in Education
      - Weimer's Five-step Process for Improving Teaching

  - Classroom Assessment 31
  - The Classroom Assessment Process 34
    - Teaching Goals 35
    - Classroom Assessment Techniques 38
  - Studies Employing the Teaching Goals Inventory 40
    - Teaching Goals and Academic Culture 40
    - Teaching Goals of Part-time Educators 43
    - Teaching Goals of Practitioner Educators 44
    - Teaching Goals at Senior Research Universities 46
  - Web-based Instruction 49
    - Content 55
    - Teaching Roles 56
    - Teaching Methods and Assessment Strategies 58
    - Interaction and Communication 59
    - Instructional Goals 62

The Community College Environment 63
Teaching Status 65
Years of Teaching Experience 68
Conclusion 69

III. METHODOLOGY 72

Research Questions 72
Population 73
Sample 73
Variables 74
Research Design 75
Instrumentation 77
    Item Development and Validity 78
    Reliability 80
Data Collection 82
    Web-based Survey Research 82
Method of Analysis 86

IV. RESULTS 94

Demographic Data for the Sample 95
    Reliability 97
MANCOVA Analysis 99
    MANOVA/MANCOVA Assumptions 99
    Multivariate Test 103
    Univariate Tests and Hypothesis Testing 104
    Observed and Adjusted Means 105
Research Hypotheses 107
Additional Findings 112
Summary 115

V. DISCUSSION 117

Summary of Findings 118
    Higher Order Thinking Skills 120
    Basic Academic Success Skills 122
    Discipline-Specific Knowledge and Skills 124
    Liberal Arts and Academic Values 125
    Work and Career Preparation 126
    Personal Development 127
Additional Findings 129
    Goals of Web-based Faculty 129
    Teaching Experience and Status 131

Comparison to National Study 132
Effect of Web-based Instruction 134
Implications for Practice and Conclusions 138
Recommendations for Future Research 142

APPENDIX A 145

APPENDIX B 155

APPENDIX C 157

REFERENCES 159

BIOGRAPHICAL SKETCH 167

8

LIST OF TABLES

3.1 Coefficient Alpha Reliabilities for Final TGI Clusters 81

4.1 Demographic Characteristics of the Sample 97

4.2 Coefficient Alpha Reliabilities for TGI Administration 98

4.3 Means and Standard Deviations of Dependent Variables 101

4.4 Pearson Product Moment Correlations r Among Dependent Variables 102

4.5 Multivariate Analysis Tests 104

4.6 Univariate Analysis Tests 105

4.7 Summary of Adjusted Means 106

4.8 Higher Order Thinking Skills 108

4.9 Basic Academic Success Skills 109

4.10 Liberal Arts and Academic Values 110

4.11 Personal development 112

4.12 Between-subjects Effects for Covariates 113

4.13 Comparison of Data with Angelo and Cross' Nationwide Sample 115

LIST OF FIGURES

1.1 The Effect of Evaluation on Teaching 2

2.1 Grid of Effective Instruction 22

ABSTRACT

The purpose of this study was to identify the instructional goals of faculty who teach in the web-based environment and compare those to the goals of faculty who teach traditional, face-to-face courses. Due to the widespread use of web-based instruction and a shift in learning environments, it is important to understand the difference in teaching goals, if any, between these teaching methods. Study participants consisted of faculty members from two-year public community colleges in Florida. Data was collected via a website that hosted the Teaching Goals Inventory (TGI) developed by Angelo and Cross (1993). The TGI not only helps faculty to identify teaching goals, but also begins by articulating these goals in a precise manner so that faculty will have a clear understanding of exactly what it is they are trying to accomplish. Understanding the importance of using teaching goals to effectively assess instruction is necessary in not only the traditional classroom, but in the new teaching environments that currently exist, such as distance learning and web-based instruction.

The TGI assists faculty in identifying their instructional goals for a specific class that they are teaching. This instrument categorizes teaching goals into six different goal clusters: higher order thinking skills, basic academic success skills, discipline-specific knowledge and skills, liberal arts and academic values, work and career preparation, and personal development. Considering the six dependent variables, data analysis consisted of a multivariate analysis of variance (MANCOVA) design. Number of years of teaching experiences and teaching status (part-time or full-time) were used as covariates in the analysis and were also tested for any significant effects. A comparison to Angelo and Cross' (1993) national study was also included.

Faculty were divided into three groups based on their experience in teaching online courses and then matched on discipline. The overall omnibus test proved to be significant, which indicated that there were initial differences among the groups. Further testing, with a Bonferroni adjustment, found significant differences for the goal cluster higher order thinking skills, as faculty who completed the TGI for a web-based course had a greater preference for this goal cluster than faculty who have never taught a web-based course and completed the inventory for a traditional course. Additionally, in all of the teaching goal clusters, faculty who had taught both methods and who completed the TGI for a web-based course rated all of the goals higher than faculty who had taught only traditional courses. In all goal clusters but one, faculty who had taught both methods but who completed the TGI for a traditional course rated the goals higher than faculty who taught both methods and completed the inventory for a web-based course. No effect was found by the covariates number of year of teaching experience and teaching status.

The differences between these groups indicate that there are definite preferences among faculty who teach traditional and web-based courses. Additionally, it suggests that teaching in a web-based environment has an effect on their instructional goals, whether it is simply an awareness of the changes in different learning environments or a profound insight into the need for specific adjustments in teaching goals, strategies, and techniques when shifting from the traditional classroom to the online setting, and back

again. This is a significant finding of which faculty themselves may not be fully aware, and one that can lead to considerable improvements in overall teaching effectiveness.

It is difficult to ascertain from this study whether the effects on the teaching goals among the groups of faculty were influenced by the technology of the web-based setting, or by the fact that faculty needed to readjust their teaching styles to accommodate a change in the learning environment. Though significant differences were found among groups, further research would need to be conducted to substantiate the exact cause of these findings.

CHAPTER I

INTRODUCTION

During the past few decades, higher education has come under a number of criticisms by society and government, particularly in terms of the quality of education. In 1983, *A Nation at Risk*, by the National Commission on Excellence, triggered one of the first waves of educational reform in the United States. Though primarily focused on high school reform, the report affected all realms of the educational system. A decade later, *An American Imperative* was issued, echoing many of the ideas and thoughts of *A Nation at Risk* (Johnson Foundation, 1993). This report called for putting student learning first, creating a nation of learners, and, as stated by O'Banion (1997), redesigning the learning system in order to meet the needs of the 21st century. These two reports have prompted an intense evaluation of the educational structure in this country.

A by-product of this re-evaluation is a myriad of questions regarding student learning and teaching effectiveness in education (Angelo & Cross, 1993). In support of evaluation efforts, Fink (1995) declared that evaluating teaching is a wise use of time, as teaching improves with each evaluation. As depicted in the conceptual model in Figure 1.1, the quality of teaching for those who consistently evaluate becomes higher over time than for those who do not. Thus, evaluations allow teachers to more fully reach their potential (Fink, p. 192). Additionally, the author stated that it is important for teachers to track the quality of their teaching in order to create a record for others who will need evidence of their teaching, such as a department head or potential employer. The way to create this is through the evaluation of instructional methods. Through evaluation, faculty members are able to comprehend their own teaching methods and know whether they are performing at an acceptable level (Fink).

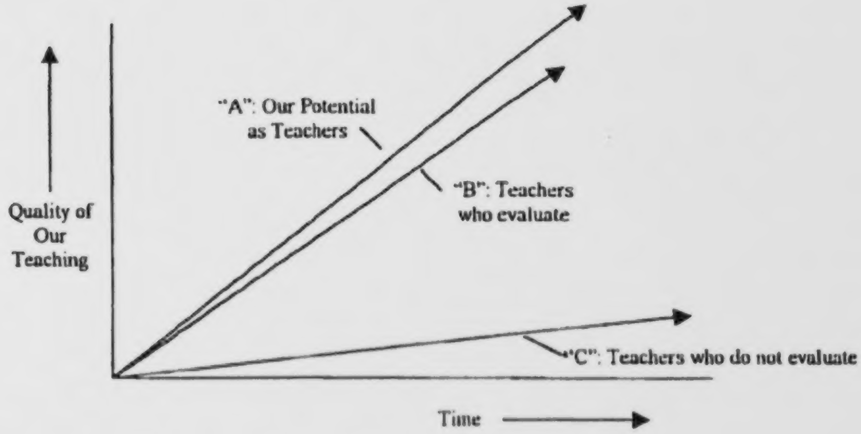

Figure 1.1 The effect of evaluation on teaching. From "Evaluating Your Own Teaching," by Fink, L.D., 1995, *Improving College Teaching*, p. 192.

Classroom assessment, the specific use of assessments by teachers in their individual classrooms on a daily basis, can assist faculty with the evaluation process. A significant aspect of classroom assessment is the development and evaluation of teaching goals which assist faculty in clarifying their methods and assessing whether or not they are accomplishing their objectives. As an introduction to the study proposed, this chapter

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will discuss the challenges of effective teaching in terms of instructional goals and classroom assessment. Additionally, the conceptual framework of the study will be outlined, as well as the study's significance to the research on higher education. These issues will be examined in relation to web-based instruction and the effect this technological medium may have on faculty teaching goals.

Teaching Goals and Classroom Assessment

McKeachie (1994) defined teacher effectiveness as "the degree to which one has facilitated student achievement of educational goals" (p.315). Critics of teaching and learning have offered numerous proposals on how to improve teaching effectiveness, yet they often fail to involve faculty in these reform efforts. This is one reason why these efforts often do not succeed (Cross & Steadman, 1996). Classroom research and assessment allow for faculty to become directly involved in evaluation in their own classroom, thereby effectively improving their teaching methods. Classroom research, i.e. the "ongoing and cumulative intellectual inquiry by classroom teachers into the nature of teaching and learning in their own classrooms," is an important avenue to improving teaching effectiveness (Cross & Steadman, p.2).

Angelo and Cross (1993) stated that, "across the spectrum of higher education, its leaders are calling for more attention to teaching, and there is evidence of increased effort to help faculty members become more effective teachers" (p. xiii). In order to measure whether students are learning what they are supposed to be learning, it is necessary to examine whether teachers are effectively teaching what they are supposed to be teaching. Classroom assessment is one method that allows faculty to understand the learning process better and to increase their ability, as well as the ability of the student, to become more effective learners. In order to enhance the value of learning, both students and teachers must be empowered to do so (Angelo & Cross, 1993).

Most importantly, effective assessment cannot occur without specifically defined goals. Most faculty define their goals in terms of course content. Yet, it is when faculty think beyond course content that they can articulate the specific skills and competencies they want to teach students *through* the content (Angelo & Cross). According to Fox (1997), there is evidence to confirm that faculty do make a difference in their learners. Yet, though there are numerous studies on how and what faculty teach, there has been little research on *why* faculty teach the way they do.

By identifying and clarifying instructional goals, faculty are able to assess whether they are meeting these goals and how effectively they are teaching. The concept of beginning with teaching goals to examine effectiveness is not a new one. Locke, Saari, Shaw, and Latham (1981) reviewed a multitude of research on the effects of goal setting on performance. Ninety percent of the studies found that setting specific goals led to higher performance than not setting goals, or setting vague goals. In addition, they found a direct positive linear relationship between the difficulty of goals set and performance.

Cheng (1999) discussed the goal and task model of teacher effectiveness in which teachers should have goals that are clear and specific and outcomes that are easily observed and assessed. The achievement of these goals serves as an indicator of how well instructors are effectively teaching and the extent to which students are learning.

The heavy emphasis on accomplishing planned goals and tasks is the predominant focus of teaching effectiveness. Cheng states, "the goals and tasks that are relevant to both teachers and schools in a specific context and time framework are important research issues in studying teacher effectiveness" (p. 3).

This concept, of achieving specific goals in order to effectively assess teaching and learning, is the basis for conducting classroom assessments. Angelo and Cross (1993) developed a Teaching Goals Inventory (TGI) that assists faculty in identifying their instructional goals for a specific class that they are teaching. This instrument categorizes teaching goals into six different goal clusters: higher order thinking skills, basic academic success skills, discipline-specific knowledge and skills, liberal arts and academic values, work and career preparation, and personal development.

The TGI not only helps faculty to identify teaching goals, but also begins by articulating these goals in a precise manner so that faculty will have a clear understanding of exactly what it is they are trying to accomplish. Understanding the importance of using teaching goals to effectively assess instruction is necessary in not only the traditional classroom, but in the new teaching environments that currently exist, such as distance learning and web-based instruction. The relevance of the online teaching environment in this context is discussed in the following section.

Web-Based Instruction

Demands of a growing student population, diverse demographics, and an increase in costs associated with providing a significant amount of education have forced educational institutions to find ways to become more productive (Baker & Gloster, 1994).

According to Barnard (1997), "with more working adults seeking to continue their education for career advancement and recareering in a constantly shifting job market, higher education institutions are seeking innovative ways to provide flexible course offerings through new media" (p. 31). The result of these pressures is the expanding use of distance education among higher education institutions.

Due to the rising costs of developing new buildings and maintaining existing ones, in addition to other expenses associated with a campus infrastructure, many higher education institutions are turning to distance learning as an alternative method of education (Barnard, 1997). Developments in technology are allowing colleges and universities to expand their student populations geographically and to provide access to students throughout the nation and the world (Rockwell, Schauer, Fritz, & Marx, 1999). Distance education programs have created opportunities for educators to meet the needs of an ever-changing society and do so economically and efficiently.

While many recognize that distance education has existed for quite some time, it is the newer technologies that have enabled this method to grow so rapidly. The development of modern technology, such as television and computers, has enabled distance education to become established as a legitimate and often preferred method of education (Arreola, 1995). Web-based instruction (WBI) is just one form of distance education that is currently being used to allow students greater access to education. Khan (1998) defined WBI as "a hypermedia-based instructional programme which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported" (p. 63). The World Wide

Web (Web) is the latest vehicle through which institutions are offering credit and non-credit courses to students.

According to Baker and Gloster (1994), the realization that higher education institutions need to become more productive in their learning resources is leading them to a teaching and learning model that supports student access to instructional resources, course information, and faculty lectures via networks. Educators are realizing that technology and education are consistently becoming linked together and may soon become inseparable.

Although many colleges involved in implementing web-based instruction systems are four-year institutions, some educators feel that the community college is the natural "first tier" with which to begin (Johnstone & Tilson, 1997). Community colleges are at the forefront of change in American higher education, as they have the ability and the desire to be flexible to accommodate the needs of a changing society. According to a survey conducted by the National Center for Education Statistics, two-year public institutions accounted for 45 percent of the total number of public and private institutions offering distance-education, compared with 28 percent for public 4-year institutions. (National Center for Education Statistics, 1999).

In terms of student enrollments, "most of the enrollments in distance education courses were at public 2-year and public 4-year institutions. In addition, the number of enrollments in college-level, credit granting distance education courses was considerably higher at public 2-year institutions than at public 4-year institutions" (U.S. Department of Education, 1999, p. 15). The total percentage of colleges offering distance education has steadily increased over the past few years, from 58 percent in 1995 to 72 percent in 1998 (U.S. Department of Education). A report from the American Association of Community Colleges (2000) stated:

> Technology does not replace faculty, but it changes the teacher-learner relationship. Technology compels learners to be more active participants in the learning process. This shift means that instructors become facilitators, strategists, and coordinators for learning rather than lecturers or assigners of lessons and homework. They must focus more on different learning styles, conditions for learning, appropriate climate, goals, content, sequencing, and a multitude of strategies for optimal learning experiences. (p. 18)

This shift, particularly in regard to teacher goals, is a critical component of moving from the traditional to the online environment and is an essential element in this study.

Purpose

Because numerous authors (Angelo & Cross, 1993; Cheng, 1999; Cross, 1987; Cross & Steadman, 1996; Locke, Saari, Shaw, & Latham, 1981) have indicated that an important component of teaching effectiveness is teaching goals, this study will focus on identifying the instructional goals of faculty who teach in the online environment and compare those to the goals of faculty who teach traditional, face-to-face courses. Due to the widespread use of web-based instruction and a shift in learning environments, it is important to understand the difference in teaching goals, if any, between these teaching methods. As Menges (1994) stated, "This new paradigm and the shifts it will bring signal nothing less than a revolution in the way faculty and students relate to one another and to the subjects they study" (p.191).

A study conducted by the National Center for Education Statistics (1999) indicated that most institutions used asynchronous internet instruction more than any other type of distance learning techniques. In addition, when asked which types of distance education institutions intended to offer over the next three years, 82 percent of the respondents replied that they planned to increase the use of their internet courses over other types of technologies. In terms of enrollments, distance education enrollments doubled between 1994-95 and 1997-98 in credit granting courses at two-year and four-year institutions (National Center for Education Statistics). It is reasonable to conclude that distance learning, particularly internet instruction, is likely to increase in the future and become a prevalent form of learning in higher education. Examining the teaching goals of faculty who use this medium can assist in improving the quality of teaching and enhance student learning.

The guiding research question for this study is:

1. Are the instructional goals of community college faculty who teach online, web-based courses different from those of community college faculty who teach a traditional, face-to-face course?
2. Along what dimensions are the instructional goals of community college faculty who teach online, web-based courses different from those of community college faculty who teach a traditional, face-to-face course?

In the process of gathering data to respond to this question, the following additional or collateral questions will also be researched:

a. What are the teaching/instructional goals of community college faculty who teach online, web-based courses?

b. Are the goals of community college faculty who teach online, web-based courses affected by teaching status (full-time or part-time) and/or number of years of teaching experience?

c. How do the goals of community college faculty who teach online, web-based courses compare to the goals of faculty in a nationwide sample surveyed in Angelo and Cross's original study conducted in 1993?

Conceptual Framework

Research has shown that assessing instructional goals, particularly in the classroom, can assist faculty with becoming more effective teachers (Angelo & Cross, 1993; Cheng, 1999; Cross, 1987). Setting goals and measuring whether or not these goals have been accomplished allows teachers to discover if they indeed are effectively teaching what they set out to and whether their students are learning what they are supposed to be learning.

This concept is especially important when considering new learning environments, such as web-based instruction. Faculty may experience difficulty in adjusting their instructional styles to accommodate the technology. Research has shown that the online environment has influenced instructional areas such as course content (Dabbagh, 2000; Hoffman, 2001; LaMonica 2001); teaching roles (Dillon & Walsh, 1992; Dringus, 1999; Gillespie, 1998; Willis, 1994; Zukas, 1999); instructional strategies and assessment (Barr & Tagg, 1995; Billings, 2000; Carnevale, 2001; Fetherston, 2001; Whitesel, 1998; Zukas, 1999); and interaction and communication (Carnevale, 2000; Graham, Cagiltay, Lim, Craner, & Duffy, 2001; Henderson, 2001; LaMonica, 2001; Lynch, 1998). However, no studies have explored how the web-based environment may have affected teaching goals. This study will examine how web-based instruction has affected the teaching goals of faculty who utilize this instructional method. The following chapters discuss the concepts of this framework and the potential effects of these concepts on the instructional goals of faculty.

Definition of Terms

1. Classroom Assessment – "*small-scale* assessments conducted *continually* in college *classrooms* by discipline-based *teachers* to determine what students *are learning in that class*" (Cross & Steadman, 1996, p.8).
2. Web-based Instruction (WBI) – "a hypermedia-based instructional programme which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported" (Khan, 1998, p. 63).

Significance

Now, more than at any other time in recent years, attention is being focused on the importance of quality college teaching. Credible educational leaders are advocating climates and conditions conducive to instructional health and well-

> being. Individuals and institutions are looking at what classroom experiences contribute to student success and learning outcomes. (Weimer, 1990, p.201)

This statement epitomizes the importance of assessing teaching goals and effectiveness in education. Understanding the goals behind the teaching strategies enables teachers to clarify their instructional methods and accomplish the tasks at hand more effectively. Weimer noted that, "Better teaching results in better learning, and the need for a thinking, reasonable, informed, and educated citizenry has never been greater" (p. 206).

According to Angelo and Cross, there is a gap in the research between the level of assessment and classroom teaching, and it is necessary to address these different needs and purposes. Menges (1994) stated, "It seems obvious that success is more likely when the end is clearly identified and the means are well defined. Yet many plans to improve teaching founder for lack of clear goals or because progress toward success cannot be measured" (p.304). Angelo and Cross (1993) created a Teaching Goals Inventory (TGI) to assist faculty in clarifying their specific teaching goals and provide techniques to assess whether or not teachers were meeting these goals. In developing this inventory, they conducted studies with full-time and part-time educators. However, their studies focused on traditional, classroom-based courses. With the growing use of web-based technologies, it is important to consider the impact of this relatively new medium. Ascertaining whether web-based instruction has any significant effects on teaching goals can be a valuable addition to the field of classroom research and assessment, as well as to the literature on distance learning technologies.

Delimitations of the Study

The results of the proposed study are limited in terms of generalizability, as the sample will include only faculty in Florida's community colleges. Generalizations to faculty at other institutions, such as four-year universities or private colleges, should be restricted for this reason. Though geographic area is not thought to be an influencing factor in faculty teaching goals, this variable must also be considered when applying results to dissimilar institutions.

The various types of students at community colleges should also be noted. Students who attend community colleges tend to be older than the typical 18-22 year old college student who may attend a four-year institution. These "non-traditional" students may also have other priorities, such as full-time work and families. Instructors at community colleges may feel differently about their teaching methods with this population of students than if they were teaching more traditional students. Though not thought to be a confounding variable in this particular study, this should be accounted for when trying to generalize to diverse populations.

Additionally, the varied missions, programs of study, and courses at educational institutions are limitations that are not controlled for in this particular study, and are considered beyond the scope of this research. Specific characteristics of the population sample and methodological procedures are discussed in greater detail in Chapter Three. The nature of this study is to explore any differences in teaching goals between two populations of faculty.

CHAPTER II

REVIEW OF LITERATURE

This study was designed to compare the teaching goals of faculty who teach web-based and faculty who teach traditional courses. By examining the differences, if any, in these instructional goals, faculty can identify inconsistencies that arise in their teaching methods and thereby improve their instruction. In addition, this information can be further utilized by faculty and administrators to evaluate programs, curricula, and traditional assessment methods. Travis stated that, "Perhaps the most significant contribution of faculty-conducted assessment is the establishment of a process to improve teaching and learning, an advantage that traditional evaluation procedures propose to offer but rarely do" (p. 11).

A review of related literature was conducted in order to provide an in-depth understanding of the process of setting instructional goals and assessing teaching effectiveness, and the relationship to the online learning environment. The following chapter provides background on the concepts of classroom research and classroom assessment, from which the Teaching Goals Inventory was developed. Included is a review of specific assessment/feedback models that have contributed to the evolution of the classroom assessment movement.

Researchers such as Lowman (1984), Chickering and Gamson (1987), and Weimer (1990), have proposed several models over the past few decades to assist faculty in improving their effectiveness. Along with the model developed by Angelo and Cross (1993) regarding teaching goals and classroom assessment, these researchers have helped build a foundation for the field of classroom research and assessment. Additionally, current research related to teaching goals in the higher education classroom is presented. The chapter concludes with a discussion of the impact of distance learning technologies, particularly web-based instruction, on instructor goals.

Classroom Research

Classroom research encompasses a broad spectrum of efforts related to improving teaching and learning, including assessing student learning outcomes, faculty development, and applying research to practice (Cross & Steadman, 1996). Since the 1960s, issues regarding research and development have been continuously promoted, and a variety of efforts to improve the quality of education have been suggested to address these issues. Reports such as *A Nation at Risk* (National Commission on Excellence, 1983) and *Scholarship Reconsidered* (Boyer, 1990) recommended taking a closer look at assessing student learning and recognizing the scholarship of teaching (Cross & Steadman).

However, many of the proponents of this educational reform movement failed to fully involve faculty in the efforts to improve teaching quality or address the issue of effectiveness at the classroom level, where learning occurs. This is in part one reason why many discipline-oriented faculty seldom apply research to practice (Cross &

Steadman, 1996). There exists a gap between research on teaching and the practice of teaching, as researchers tend to be general in their studies on this subject and practitioners have a need for specifics (Angelo, 1991).

Classroom research allows faculty to address the issue of assessment and reduce the gap between research and teaching by conducting assessments in the classroom. It is specifically defined as "ongoing and cumulative intellectual inquiry by classroom teachers into the nature of teaching and learning in their own classrooms" (Cross & Steadman, 1996, p.2). Angelo and Cross (1993) referred to the classroom as a laboratory where faculty can observe students learning and use this knowledge to effectively improve their teaching methods. Cross (1987) stated that it is important for teachers to become intellectually involved in the process of classroom research. By assessing their own performance in the classroom and the impact this has on student learning, the researcher and the practitioner are, in a sense, the same person, resulting in a greater likelihood that the findings will be actively applied in the classroom.

Cross and Steadman (1996) identified a number of characteristics that help to further define classroom research. This field of study is a collaborative effort between teachers and students. They are seen as partners in the learning process. This theme is supported by numerous researchers, particularly in relation to the learning paradigm in education (Barr & Tagg, 1995; Gillespie, 1998; O'Banion, 1997). This type of research is also context-specific, practical, and relevant, indicating that the purpose is not to publish findings or results. The reason teachers conduct classroom research is to obtain a deeper level of understanding of the learning that is occurring in their classrooms (Cross & Steadman).

This is not to say that this type of research is not scholarly, as well. A great deal of intellect is required to conduct assessments with students in a specific context, requiring a clear research question and a planned design. This continual assessment of student learning in the classroom is the foundation of classroom research. It is learner-centered and faculty-directed, indicating that teachers are actively engaged in the process of studying how to improve *learning*. By observing student learning on a daily basis, faculty are able to gain insight on how to teach more effectively (Cross & Steadman, 1996).

One of the most distinguishable characteristics of classroom research is that it differs significantly from what is traditionally thought of as scientific research. Rather than being performed by an objective, analytical observer, classroom research is conducted by teachers in their own classrooms. They have a stake in the results, the experience and knowledge in a subject to be able to teach it, and desire a deeper understanding of the learning process in their class. This process involves a different type of research and a different type of researcher than what the educational community has come to expect. Yet, it is proving to be a useful method of conducting assessment (Cross & Steadman, 1996).

The Evolution of Classroom Research and Assessment

The main focus of classroom research is the student, however teachers are active participants in this process, as well. The movement toward improving teaching has been affected by many who consider teachers as "lifelong learners" (Cross & Steadman, 1996). Classroom research is not only an asset for students in that they are on the receiving end of effective teaching, but for faculty, as well, as any effort to improve teaching can only be beneficial. Assessing teaching in order to improve learning is a concept that has been addressed by a number of researchers over the years and has contributed to the realization and development of this movement.

Cross and Steadman (1996) noted the work of several researchers whose efforts have contributed to the development of classroom research and assessment. These models include the importance of possessing motivational ability and interpersonal rapport with students, as depicted by Lowman (1984), Chickering and Gamson's (1987) *Seven Principles for Good Practice in Undergraduate Education*, and the impact of using feedback in evaluation (Weimer, 1990). These assessment/feedback models have contributed to the growth of the classroom research movement and have had a significant impact on the Teaching Goals Inventory created by Angelo and Cross (1993). In many instances, there is overlap in the theories of how to be an effective teacher, such as developing personal contact with students and utilizing feedback to complete the evaluation cycle. The following sections provide a brief overview of these models and the contributions they make to classroom research and assessment.

Lowman's two-dimensional model. Lowman (1984) has proposed a two-dimensional model of effective college teaching. This model focused on two main areas for effective and quality teaching, the ability of the teacher to develop interpersonal skills and rapport among students and the ability to create intellectual excitement in students to motivate them (Lowman; Travis, 1995). These skills are relatively independent of each other, however, faculty members who excel in at least one of these areas (and at the very least are competent in the other) are considered to be superior instructors and have an impact on their students (Lowman). These themes are prevalent in the *Seven Principles for Good Practice for Undergraduate Education* (Chickering & Gamson, 1987), which were developed several years later, and are central to successful classroom research. A measurement of these two indicators, developing interpersonal rapport and creating intellectual excitement, can aid faculty members in assessing effective teaching (Travis).

The first dimension of Lowman's (1984) model, creating intellectual excitement, has two components, the clarity of the faculty member's communication to students (what is presented) and the positive impact of this on students (the way the material is presented). Faculty must do more than simply convey facts and figures to students in a clear and precise manner. This may allow students to understand the material, but they may not be intellectually excited about it. Through various communication strategies, such as gestures, movements, and voice levels, teachers can stimulate students and maintain their attention (Lowman; Travis, 1995).

Lowman (1984) offered three levels of intellectual excitement for faculty: low, moderate, and high. At the lowest level of this dimension, faculty present most material in a confusing manner and with little enthusiasm. Students have a difficult time comprehending the content, feel frustrated, and find it difficult to pay attention. At the moderate level, faculty have an average sense of energy and enthusiasm in teaching, and students have a fairly adequate and clear understanding of the material.

Finally, at the high level of intellectual excitement, faculty present content in a clear and well-organized manner. Relationships between and among the concepts are stressed, and the material is presented with high energy and dramatic tension, thereby engaging the students. The impact this has on the students in the class is that they see the connections among the various concepts and can apply them to different situations. Ideas are easily remembered and paying attention is natural, as students experience a sense of excitement about learning.

The second dimension of Lowman's (1984) model involved building interpersonal rapport with students. Lowman stated that the classroom is more than just a place of cognitive learning, but a place where personal emotions occur. Both faculty and students are vulnerable to these emotions, whether it is from occurrences inside or outside of the classroom. Students are influenced affectively by authoritative methods, negative feedback, and unfair practices, particularly when being evaluated in a group setting (Lowman; Travis, 1995). Faculty are affected by a need for achievement and success; they want to be liked and respected by their students, and can be intimidated by the potential outcomes of student evaluations (Lowman; Travis).

Classroom research and assessment is one way to enact Lowman's model in the classroom. By conducting assessments in the classroom, particularly through the techniques provided by Angelo and Cross (1993), students gain a sense of appreciation and respect for the teacher, and feel that the teacher is concerned with their learning needs. Faculty are able to build a rapport with students by initiating this kind of assessment, and also feel less intimidated than if conducting a formal evaluation process of their teaching abilities, as is inherent in many required institutional evaluation procedures.

The sense students have that their teacher is interested in improving his or her teaching in turn motivates students to become excited about the class. Conducting classroom research is not only a way to build a rapport with students, but has the ability to get them intellectually excited about being there, as well. Faculty can increase student motivation and enjoyment in their classes by promoting positive emotions, such as showing a respect for students and their capabilities, and avoiding the stimulation of negative emotions, such as anxiety and anger, in their students (Lowman, 1984). As with dimension one, there are three levels of developing interpersonal rapport. At the lowest level, faculty are cold and distant in their attitudes, may have controlling and inconsistent methods, and show little interest in their students as persons. Students may feel disliked by the teacher, be afraid to ask questions, and be motivated by a sense of fear (Lowman).

At the moderate level, the teacher is approachable, democratic, and responds to students, though makes no effort to know them personally. Students are aware of the teacher's expectations and are reasonably well-motivated, but feel no responsibility to do more than what is required of them. Finally, at the highest level of interpersonal rapport, teachers are very student-centered, have a strong interest in their students as individuals, and encourage students to communicate openly in terms of questions and expressing personal viewpoints. Students have a sense that the teacher cares about them and their success, have little anxiety about the teacher or their ability to perform academically, and are highly motivated to meet and exceed their teacher's expectations (Lowman, 1984).

Combining these two dimensions, intellectual excitement and interpersonal rapport, forms nine combinations, as can be seen in Figure 2.1, thus resulting in different options for a specific faculty member to assess his or her effectiveness (Travis, 1995, p. 18). Faculty who are high in intellectual excitement and high in interpersonal rapport are considered exceptional teachers. Contrarily, faculty who fall into the lower levels of both dimensions are seen as inadequate and less effective (Travis). Lowman (1984) stated that outstanding instructors are those who rate high in either of these dimensions, though all instructors must be at least at the moderate level in each dimension in order to competently teach students.

Intellectual Excitement	Low	Moderate	High
High	Content-Centered	Traditional	Exceptional
Moderate	Sufficient	Ample	Pragmatic
Low	Deficient	Mediocre	Student-Centered
	Interpersonal Rapport		

Figure 2.1 Grid of effective instruction. From *Models for Improving College Teaching: A Faculty Resource*, by Travis, J.E., 1995, p.18.

This model, similar to many that assess learning styles for students, can be somewhat limiting, as some instructors may fit into more than one category (Travis, 1995). These nine styles of teaching do not describe every teacher perfectly. Instructors may show characteristics of one type more than another, or a combination of elements from different categories. Additionally, though a teacher may be considered inadequate or deficient in their skills, this does not mean that student learning does not occur (Lowman, 1984; Travis). The skills required by Lowman's model can be identified through the various examples provided of specific teaching styles and strategies at the various levels, as well as a list of descriptive adjectives provided (Travis). Used in conjunction with classroom research and assessment techniques provided by Angelo and Cross (1993) this model can be used to help build rapport with students, increase their intellectual excitement, and improve overall teaching effectiveness.

Seven principles of good practice in undergraduate education. In 1987, Chickering and Gamson published the *Seven Principles for Good Practice in Undergraduate Education*. These principles serve as a framework for educators who are looking to evaluate the teaching in their courses (Graham, Cagiltay, Lim, Craner, & Duffy, 2001). According to Travis (1995), these seven principles are recognized as "a basic approach to the knowledge of pedagogy faculty need" (p. 15) and "provided the substance for . . . a process of generating feedback with research that generated the development of an assessment model for faculty" (p. 11). Together, these seven principles make use of six dominant powers in education - activity, cooperation, diversity, expectations, interaction, and responsibility (Chickering & Gamson, 1991).

The first of the seven principles stated that good practice encourages student-faculty contact. Frequent interaction between students and faculty is one of the most influential factors on student involvement and motivation, and enhances students' intellectual commitment and personal development (Chickering & Gamson, 1991;

Sorcinelli, 1991). Chickering and Gamson cited several studies (Cohen, 1981; Pascarella, 1980; Wilson, 1975) that support this principle, noting that student-faculty contact, both inside and outside of the classroom, is beneficial to both parties and characterizes good teaching. This is reminiscent of Lowman's (1984) model, which also stressed the importance of having excellent "interpersonal rapport" with students in order to motivate them intellectually in the classroom.

Good practice encourages cooperation among students is the second principle. Chickering and Gamson (1991) stated that good learning occurs through collaboration, rather than competition. This principle encompasses not just cooperative learning techniques, such as working in small groups and evaluating group performance, but also includes peer teaching and learning. Situations in which students teach students under the supervision of a teacher and encourage the sharing of ideas and responses result in sharpened thinking and deeper understanding of the subject matter (Chickering and Gamson; Sorcinelli, 1991). Cross and Steadman (1996) expanded this principle of encouraging cooperation to include colleagues, stating that when faculty cooperate with each other and share assessment ideas and techniques, the result is an improvement in teaching effectiveness.

The third principle, good practice encourages active learning, is tied into the previous principle in that cooperative learning generally requires active, not passive, learners. There are various ways students can become involved in active learning, such as discussing case studies, peer critiques, and team projects. Additionally, students can actively learn outside the classroom, as well, through internships, teaching assistantships, and independent study assignments. By encouraging student-to-student interaction, faculty allow students to make what they are learning part of themselves (Chickering & Gamson, 1991; Sorcinelli, 1991). Faculty, as well, are required to become active learners in classroom research. By engaging in this assessment of student learning and self-initiating questions regarding the learning process, they are effectively improving their own learning process (Cross & Steadman, 1996).

Providing prompt feedback is the fourth principle from Chickering and Gamson (1991). Students require feedback on their performance, not only during courses, but throughout their college career. Providing appropriate and timely feedback through various assessments such as tests, papers, in-class discussions, and presentation enables students to evaluate themselves and reflect on what they have learned. Feedback is a central part of student learning and is necessary in order for them to benefit from their experiences (Chickering & Gamson; Sorcinelli, 1991). The feedback loop is a concept addressed by researchers throughout the literature (Angelo & Cross, 1993; Cross & Steadman, 1996; Weimer, 1990). Angelo and Cross stressed the importance of completing this loop as essential to effective classroom research. By conducting various classroom assessment techniques, faculty gain insight into their teaching methods and how these are affecting their students in the learning process.

Good practice also encourages time on task, meaning "effective use of time in the college classroom means effective teaching for faculty and effective learning for students" (Sorcinelli, 1991, p.20). Students need to learn effective time management and research has shown that students learn more when they are engaged in learning for a longer period of time (Chickering & Gamson, 1991). However, this time on task principle is concerned not just with the *amount* of time spent on a task, but the quality and effectiveness of that time, i.e. *how* it was spent. Colleges are providing numerous options for students to choose from in order to accomplish this, such as distance learning, weekend programs, and flexible course scheduling (Chickering & Gamson, 1991; Sorcinelli).

Although the time faculty spend conducting classroom assessment is beneficial, Cross and Steadman (1996) acknowledged that this process requires a substantial amount of time and commitment, which can pose a problem for teachers who barely have enough time to cover class content. The key is to examine how class time is used and assess whether faculty are spending this time efficiently. Teachers may assume that they are using class time effectively, however research has shown findings to the contrary when compared with student perceptions. Thus, classroom assessment may assist in increasing this effectiveness so that student learning is maximized (Cross & Steadman).

Communicating high expectations, the sixth principle, is important for students who are poorly prepared, as well as those who are well-motivated. Chickering and Gamson (1991) found that when teachers hold high but attainable goals for themselves and for their students, particularly in terms of academic achievement, these expectations are often fulfilled. Additionally, studies have shown that achieving these academic goals brings about positive changes in areas such as student attendance and personal responsibility. High expectations of faculty have continued to be part of almost every college curriculum, and many teachers possess these expectations for themselves, as well.

Classroom research and assessment is a way for these faculty to improve their teaching and continue to be effective in their classes (Cross & Steadman, 1996). Sorcinelli (1991) cited this principle as one of the central themes of the recent reform movement in assessment in higher education. The practice of communicating high expectations, whether to students or teachers, has proven to be valuable in improving learning for students and faculty alike.

The seventh, and final, principle involves respecting diverse talents and ways of learning. This principle recognizes that students need to learn in ways that work best for them at first, and can then later learn in ways that are new and more challenging. By understanding that students have a multitude of different styles of learning and talents, faculty are able to be more sensitive in conveying course material. In doing so, faculty facilitate growth and development in their students in a variety of realms, including academic, personal, social, and vocational (Chickering & Gamson, 1991; Sorcinelli, 1991). The classroom assessment techniques developed by Angelo and Cross (1993) accommodate this need for diversity, not only for student learning styles, but for faculty teaching styles, as well (Cross & Steadman, 1996).

Overall, the principles identified teacher and student commitment as being central to improving undergraduate education (Sorcinelli, 1991). The use of the seven principles can be seen throughout Angelo and Cross' (1993) work on teaching goals and classroom assessment techniques. For example, the Minute Paper is a technique faculty use to understand what students have learned in a particular class. With this kind of faculty-student contact, students feel as if the teacher is taking a noted interest in their learning

(Cross & Steadman, 1996). Through the use of this one simple technique, a connection is made for both parties and a step toward improved teaching is taken. Cross and Steadman stated that the seven principles can be used to aid faculty in a lifelong learning process for teaching and "serve as a rationale for Classroom Research as a productive learning experience for both teachers and students" (p. 20).

Weimer's five-step process for improving teaching. Weimer's (1990) model not only allows teachers to assess their effectiveness through a five-step process, but also provides "action" steps to move the instructor toward an implementation process in a systematic way (Travis, 1995). The five stages of Weimer's model include awareness, information retrieval, selection of alternatives, implementation of the plan, and evaluation. Each of these stages has a specific purpose and involves particular strategies in order to achieve a goal (Travis). The overall importance of obtaining feedback for evaluation is a central part of Angelo and Cross' (1993) classroom research model, as well. Completing the "feedback loop" is necessary in order for faculty to effectively improve their teaching.

Weimer (1990) stated faculty often take a "hit-or-miss" approach to improving their instruction, rather than the systematic approach that is needed. This results in an abstract explanation of the problem, as opposed to the specific behaviors or practices that need to be identified as being problematic. In addition, the process of instructional improvement needs to be ongoing, as there is no permanent or lasting solution to address the various teaching problems that may arise (Weimer). This continual evaluation of teaching and learning has become integrated into Angelo and Cross' (1993) definitions of classroom research and classroom assessment.

Developing instructional awareness is the first stage in Weimer's (1990) assessment model. Faculty must become aware of how they teach, of the specific instructional strategies and techniques they use both inside and outside of the classroom. Not only is *how* they teach important to understand, but understanding *why* they teach the way they do is equally as critical. The use of particular examples and when they are used, the number of questions they ask, even the way they move about the classroom are all aspects of being instructionally aware. The basic premise of this stage is that faculty "cannot possibly make reasoned choices as to what they could and should do if they do not have a clear understanding of how and why they teach as they do" (Weimer, p. 36).

Angelo and Cross (1993) stressed the importance of this very same idea. Why a teacher chooses to teach one concept before another and how they go about teaching it results in an evaluation of not just teaching strategies, but also of teaching goals. Faculty need to clarify and understand the importance of their teaching goals in order to measure their progress in a course and assess if those goals are being met. They stated that it is challenging to conduct "meaningful assessment" if goals are not first clearly articulated (p. 36).

The second stage in Weimer's (1990) model involved gathering information in areas such as how an objective observer views the instructor's teaching, and alternative practices from which the observer believes the instructor could benefit. It is crucial to have other participants observe the instructor, such as students and colleagues, at different times in order to obtain objective opinions. These observers are able to not only observe the faculty member, but can also relate the effect the teaching had on them. They are then able to offer suggestions on alternative practices for accomplishing the objectives set forth for the class (Weimer).

The third step in the process involved making choices about what should be changed, if anything, and how the professor can go about making the necessary changes (Weimer, 1990). Weimer noted that it is important to change those instructional techniques and practices that are "at odds" with a faculty member's beliefs about teaching and learning. For example, a faculty member whose goal is to develop students' critical thinking skills, yet uses multiple-choice item tests as an evaluation tool to test recall, is not accomplishing what he or she set out to do. Deciding what parts of instruction to improve can be accomplished "by deleting those parts of it that do not work well and by expanding those aspects that are effective" (Weimer, p. 39).

It is also important to note that the content of a discipline may dictate the ways in which instructional techniques can be changed. English literature, for example, has vastly different discussion opportunities than do the elements of a periodic table in a chemistry class (Weimer, 1990). Returning to a teacher's chosen goals for the class and identifying whether these goals are being met can be an effective way to identify needed changes. The Teaching Goals Inventory (TGI) is a tool faculty can use to help prioritize their teaching goals in order to assess which ones are most important to achieve for a particular class.

Step four involved the actual implementation of the chosen alternatives, which should be incremental and systematic. In this way, changes occur gradually and are manageable for the faculty member, rather than being performed all at once (Weimer, 1990). Faculty who choose to begin with highly successful changes generally develop a greater commitment to the process and are more likely to continue with it, as they become increasingly confident with their abilities. Additionally, it must be noted that this step is a continuous and ongoing process, as faculty should constantly "tinker" with their teaching methods in order to keep improving their techniques (Weimer).

The final step in the process, evaluation, enables the faculty member to assess the changes that have been identified and implemented in the previous four stages. This is an integral part of the process, as once the changes have been evaluated, the cycle can continue. This process is similar to the feedback loop in Angelo and Cross' (1993) classroom research model. In order to successfully complete this loop, teachers obtain feedback from learners through the use of classroom assessment techniques, and in turn, provide the results of the assessments back to the learners, along with ideas on how to improve learning. Both models acknowledge that there is no one best way to utilize this process, as there are many different types and styles of faculty and instructional needs (Weimer, 1990; Angelo & Cross). Each teacher must adjust the models to their own personal styles.

Classroom Assessment

Classroom assessment is often used interchangeably with the term classroom research, though these are two different entities. Classroom assessment falls within the context of classroom research and is a method for faculty to conduct research in the classroom (Cross & Steadman, 1996). Classroom research encompasses an array of endeavors that have occurred over the past few decades to improve the state of teaching and learning in education, including faculty development practices and student learning assessment. However, much of this research has often been left in the hands of "experts" who in many instances have little contact with the student in the classroom. As a result, the data and information collected is not communicated to the faculty in the classroom who need the information the most (Cross & Steadman).

Angelo and Cross (1993) have approached the subject of assessment and teacher effectiveness by focusing on the learner. They stated that, in order to know if a teacher is being effective, he or she must first assess if the learner is actually learning what is being taught. The purpose of classroom assessment is to make students and teachers aware of the learning that is occurring or not occurring in the classroom and help to clarify not only *what* students learn, but *how* they learn (Cross & Steadman, 1996).

As defined by Cross and Steadman (1996), "Classroom assessment consists of *small-scale* assessments conducted *continually* in college *classrooms* by discipline-based *teachers* to determine what students *are learning in that class*" (p. 8). It is necessary for teachers to think in smaller terms for assessment in order for them to directly relate it to their actions in the classroom. This type of assessment allows for completion of the feedback loop, that is, allowing those who conduct the assessment to obtain and actually use the results to make improvements (Cross & Steadman).

Angelo and Cross (1993) have spent several years studying classroom assessment and teaching goals in order to help faculty become more effective teachers. They stated, "To assess and improve instruction, faculty must first clarify exactly what they want students in their courses to learn. Once teachers know what their instructional goals are, and have determined the relative importance of goals, they can begin to assess how well students are learning what they are trying to teach" (p.13). Their model incorporates many of the aspects of the previous research discussed thus far, and is based on several assumptions, the first of which is that the quality of student learning is related to the quality of teaching. Therefore, it is logical to conclude that in order to improve learning, faculty must first improve teaching. In this process, both faculty and students must be actively involved for maximum effectiveness to occur (Angelo & Cross).

Feedback, both for faculty and for students, is another assumption used for this model. Once teachers have clearly developed goals and objectives, they require feedback on whether they are achieving these goals. Traditionally, teachers have defined their goals in terms of the course material. However, it is when they begin to define these in terms of particular skills used in teaching that they become assessable. Once these goals are identified, faculty are better equipped to identify the types of feedback to collect and how to do so (Angelo & Cross, 1993). One of the main purposes of classroom assessment is to provide direct and immediate feedback to teachers in order to make informed decisions regarding their instruction (Angelo, 1991).

Angelo and Cross (1993) also made the assumption that intellectual challenge can enhance faculty abilities, particularly through systematic and regulated inquiry of teaching and learning in the classroom. By designing assessments themselves, formulating specific questions and responses to issues concerning their own teaching, faculty are more likely to obtain meaningful findings related to their teaching. The authors assumed that faculty who conduct classroom assessment do not need specialized training; they simply need to be knowledgeable about their discipline and be motivated and dedicated to improving their instructional methods. Finally, collaborating with other teachers and actively involving students in the assessment process often produces a synergy among the participants, which ultimately enhances learning and achieves more valuable results (Angelo & Cross).

Assessing instructional methods through the examination of teaching goals has numerous advantages. It allows faculty to become involved in the process on a deeper level and gives them a sense of ownership and control over the process (Angelo & Cross, 1993). Additionally, the model focuses on improving instruction based on research, a factor that is appealing to many faculty (Travis, 1995). This process can also, however, be time consuming and a bit overwhelming, particularly for faculty who have never had to clarify their goals in a precise manner. Yet, it is this clarification of goals that allows faculty to later link to specific classroom assessment techniques (Angelo & Cross).

The Classroom Assessment Process

The classroom assessment process involves a number of steps for faculty who choose to go beyond using assessment intermittently and incorporate the concept into their classes on a regular basis. Angelo and Cross (1993) have developed a ten-step process that is designed to assist teachers in developing a successful method for using classroom assessment consistently throughout the semester. This model was developed to be flexible, in order to meet the needs of diverse styles and instructional methods. The process begins with the faculty member choosing a particular course to assess. He or she then clarifies the teaching goals for this course through the Teaching Goals Inventory (TGI), and continues with the use of Classroom Assessment Techniques (CATs) that can be utilized to collect feedback from students regarding teaching methods. The following sections discuss the various elements of the classroom assessment cycle.

Teaching Goals

Angelo and Cross (1993) asserted that clarifying teaching goals helps faculty understand what it is they are trying to teach and allows them to properly assess the effectiveness of their instructional methods. They noted, however, that faculty rarely express their goals in explicit terms. "This is not to imply that most faculty do not have teaching goals. They clearly do. Nonetheless, many teachers find it difficult at first to articulate their specific instructional goals for particular classes" (Angelo & Cross, p. 36). As a result, the Teaching Goals Inventory (TGI) was developed.

The TGI is to be completed by an instructor for a particular class, and evaluates each of the listed goals according to the importance of achieving that goal in that specific class. This self-scoring inventory consists of 51 goal statements that can be grouped into six goal clusters: (a) higher order thinking skills, (b) basic academic success skills, (c) discipline-specific knowledge and skills, (d) liberal arts and academic values, (e) work and career preparation, and (e) personal development. The goal statements are broad in nature so that the instrument can be used across a variety of disciplines. The final question on the survey assesses the instructor's perception of his or her primary role as a teacher and is similar to the six goal clusters.

The goal cluster higher order thinking skills centers on developing skills beyond the basics and taking a more holistic approach to the subject. Some specific skills included in this cluster are "develop problem-solving skills," "develop ability to synthesize and integrate information and ideas," and "develop analytic skills" (Angelo & Cross, 1993, p. 20). The goals in this cluster focus on synthesizing knowledge and thinking creatively about solutions to problems. Faculty who rate these goals as essential tend to develop methods to measure a student's ability to integrate what they have learned and apply these principles to problems and situations.

Basic academic success skills refer to skills that are at the core of learning. These skills include "improve listening skills," "improve reading skills," and "develop ability to concentrate" (Angelo & Cross, 1993, p. 20). Skills such as these focus on the essential tasks inherent in the learning process. The aim is to enhance areas that contribute to improving a student's overall study habits and strategies. These are generally fundamental areas of concern for faculty in setting goals.

The next goal cluster, discipline-specific knowledge and skills, concentrates on the knowledge and values specific to the discipline. Goals such as "learn terms and facts of this subject," "learn to appreciate important contributions to this subject," and "learn to understand perspectives and values of this subject" are some of the goal statements included in this cluster (Angelo & Cross, 1993 p. 20-21). These goals center on learning the concepts and understanding the various perspectives that shape the discipline, and ultimately contribute to preparing students to continue their education.

The goal cluster liberal arts and academic values refers to goals that are central to the principles of a liberal arts education. Specific goals in this cluster include "develop a lifelong love of learning," "develop aesthetic appreciation," and "develop a commitment to exercise the rights and responsibilities of citizenship" (Angelo & Cross, 1993, p. 21). These are areas that assist students in being open to new ideas and cultures and learning to appreciate traditions that are different from their own. Developing the ability to understand the various roles history, science, and the arts have played in advancing civilization and utilizing this information to contribute to a growing society is an essential component to this goal cluster.

Work and career preparation is the next goal cluster. It focuses primarily on the ability of the student to work with others productively. Skills such as "develop a commitment to accurate work," "improve ability to follow directions, instructions, and plans," and "develop ability to perform skillfully" are just a few of the items in this cluster. The purpose of these goals is to assist in making students productive leaders, improve their ability to effectively utilize their time, and develop management skills. A commitment to working successfully with others and accomplishing personal ambitions are general principles of this cluster.

The final goal cluster, personal development, concentrates on those abilities and behaviors that contribute to developing the student as a person, rather than on specific classroom-related skills. Items in this cluster include "develop a commitment to one's own values," "develop respect for others," and "develop capacity to think for oneself" (Angelo & Cross, 1993, p. 21). These goals center on improving students' capacity to make intelligent decisions and to become responsible citizens. Cultivating their emotional and physical well being and making a commitment to being an honest and respectful person serve to complete the goals for this cluster.

The classroom assessment process begins with articulating instructional goals, as it is often difficult for a teacher to assess learning if he or she is not clear on the purpose of the lesson. Angelo and Cross (1993) stated that beginning with the identification of teaching goals not only increases the motivation of the faculty member, but allows them to take ownership of the process as it is their goals that are being tied to the assessment process, the goals that they value, as opposed to someone else's. Though Angelo and Cross acknowledged that this process can be time-consuming, and even overwhelming at first, the end result is worth the effort as it ensures that faculty are actually assessing what they are teaching.

Faculty who complete the TGI benefit by being able to clearly identify their personal teaching goals and improve their teaching by making use of the classroom assessment techniques. These techniques assist faculty in assessing how effective their teaching is for their students. This process can further be developed into improving other courses, programs, and curriculums (Swenson, 1995).

Classroom Assessment Techniques

Once the instructor has chosen a class and identified his or her teaching goals through the TGI, the teacher must decide what kind of feedback to elicit for a particular "assessable" question he or she would like to answer (Angelo & Cross, 1993). Then, an index can be used to select specific classroom assessment techniques (CATs) to help assess those goals and elicit appropriate feedback. Angelo and Cross referred to CATs as "feedback devices" that faculty can use to collect data on how well students are learning and defined a CAT as "a specific procedure or activity designed to help faculty get immediate and useful answers to very focused questions about student learning" (p. 25).

CATs are not meant to replace traditional assessment procedures, but to complement them. Though a teacher may already be conducting informal assessments of teaching and learning, these techniques can help make the process more focused and methodical. Each technique provided is designed to be flexible enough to accommodate various disciplines, as well as teaching styles. With approximately fifty techniques to choose from, there are CATS that can be used to assist faculty with any of the identified teaching goals they choose to assess.

Examples of some of the CATs include the "Minute Paper," in which students are asked to write for one minute on what they felt was the most important thing they learned in that particular lesson and to identify any questions they may have regarding the class for that day. Another technique provided is called the "Muddiest Point." Similar to the Minute Paper, students are requested to write down what remains unclear about that day's lesson, i.e., what was the muddiest point in the lesson? (Angelo and Cross, 1993, p. 29). These techniques are used to collect feedback on what students have learned or not learned in a particular class on a specific day.

Once the instructor chooses the appropriate technique, he or she must implement it in order to collect the information needed. The data is then analyzed only to the extent that it can provide appropriate feedback to improve learning. The final step in the classroom assessment process involves interpreting the results of the assessment and presenting the results to the students, communicating to them what the instructor has learned from the responses and how he or she will improve upon the results (Angelo & Cross, 1993). By doing so, the feedback loop is complete, and instructors can use what they have learned to design additional assessment projects.

Studies Employing the Teaching Goals Inventory

Recently, a number of studies have been developed regarding faculty teaching goals and the use of the TGI. Researchers have utilized this inventory to compare goals of part-time and full-time faculty, practitioner educators, and faculty at senior research institutions. The following section summarizes these research efforts and findings regarding classroom assessment and teaching goals.

Teaching Goals and Academic Culture

Fox (1997) performed a study exploring factors influencing faculty teaching goals as they relate to an institution's academic culture. Using the TGI as a survey instrument, the researcher surveyed 600 faculty members representing all disciplines at three regional universities in North Carolina. Fox added questions regarding demographic factors such as discipline, university type, gender, and number of years teaching. Additionally, the researcher considered two distinct academic cultures, or paradigms, that have emerged in undergraduate institutions. These two cultures included the instruction paradigm, based on traditional learning and teaching methods, and the learning paradigm, which focused on making the student the center of learning.

Fox (1997) found that the academic culture of an institution or within a particular department does have an impact on faculty teaching goals. In particular, Fox concluded that faculty who chose the learning paradigm culture as best describing their teaching philosophy tended to place less emphasis on higher order thinking skills than faculty who selected the instruction paradigm. Data regarding the other teaching goals measured by the TGI were found to be insignificant in relation to academic culture. In terms of number of years of teaching experience and academic culture, faculty members who chose the instructional paradigm had taught for a longer period of time, as compared to faculty who chose the learning paradigm (an average of 18 years of teaching experience versus approximately 14.6 years, respectively).

Fox conducted several MANOVAs to determine whether teaching goals varied based on the independent variables of academic discipline, gender, and type of institution. Similar to findings by Angelo and Cross (1993), Fox (1997) found that there was a relationship between discipline and teaching goals, particularly in terms of emphasizing liberal arts and academic values. An interactive effect between gender and discipline on teaching goals was determined to be affected more by the area of instruction than on whether the respondent was male or female. There were also significant relationships between academic discipline and the two teaching goals on the TGI of work and career preparation and personal development, though no interactive effect between gender and discipline was found in terms of these two goals. Additionally, no significance was found in terms of the type of university and teaching goals. As Fox suggested, this may have been due to the similar orientations and missions of the three regional universities included in the study.

Fox (1997) conducted a correlational analysis to determine the relationship, if any, between number of years of teaching experience and teaching goals. Respondents ranged in years of teaching experience from one to 40 years. A small, negative correlation was found between two of the goal clusters, higher order thinking skills and work and career preparation. Fox (1997) concluded that faculty who had taught longer tended to rank these two goals as least important to them and did not tend to place an emphasis on these goals in their courses. In additional qualitative analysis regarding this question, four faculty members with at least 30 years of teaching experience supported this finding and felt that their role as a teacher was to be the "expert" and convey knowledge to the student, as opposed to developing higher order thinking skills with their students or focus on work and career preparation.

Fox (1997) stated that the findings from this study may contribute to the development of faculty development programs that focus on emphasizing certain teaching goals in the classroom. For example, faculty with extensive teaching experience tended not to emphasize higher order thinking skills and work and career preparation in their courses. Fox suggested that this information could be used to assist faculty in developing ways to include these goals in their classes, as supported by the *Seven Principles of Good Practice in Undergraduate Education* (Chickering & Gamson, 1987). Additionally, campus administrators can benefit from these findings by gaining an understanding of faculty teaching goals and assist in creating faculty development programs that concentrate on this issue.

Teaching Goals of Part-time Educators

Schwarze (1996) conducted a study regarding the process of goal-setting and the effects when performed by part-time faculty in comparison to full-time faculty. The researcher used the Teaching Goals Inventory to survey 196 full-time and part-time faculty in a single institution, Webster University, to determine course goals. Using the Input-Process-Product model, where the teacher was the input and the practice of setting goals was considered to be the process, the researcher evaluated teacher effectiveness for these different groups of faculty. Schwarze also added 11 questions to the original instrument regarding attitudes about assessment.

Schwarze (1996) used a series of t-tests to compare means of part-time faculty and full-time faculty across the six goal clusters of the TGI. Tests were also conducted to compare the researcher's data to that of Angelo and Cross' (1993) study of full-time faculty from four-year institutions. Additionally, Schwarze conducted a Friedman ranked test to describe how the various groups in her study prioritized the six goal clusters on the TGI.

In comparing full-time faculty to part-time faculty, Schwarze (1996) found the teaching goal of discipline-specific knowledge and skills to be significant between the two groups. However, no other significant differences were found. In terms of prioritizing teaching goals, faculty in these two groups differed in ranking on the teaching goals of liberal arts and academic values, work and career preparation, and personal development. The results specifically showed that full-time faculty prioritized personal development as least important, while part-time faculty ranked this as third most important. Additionally, whereas part-time faculty chose liberal arts and academic values as least important, full-time faculty prioritized this fourth. Work and career preparation was listed as third in importance for full-time faculty and fourth for part-time faculty. When data for these groups were combined and compared to the national data of faculty at four-year institutions by Angelo and Cross (1993), no differences were found on the basis of ranking teaching goals.

In terms of the effect of academic discipline on teaching goals, Schwarze (1996) found that subject matter was a highly significant factor in examining teaching goals among faculty, both full-time and part-time. This confirmed prior findings by Angelo and Cross (1993). In comparing teaching goals within the disciplines of Arts, Humanities, Business and Management, Math, Communications, Nursing and Science, and Social Sciences, Schwarze concluded that faculty teaching status (i.e., part-time versus full-time) was not a significant factor in terms of setting goals for a course.

Teaching Goals of Practitioner Educators

A study conducted by Swenson (1997) examined teaching goals of practitioner educators, part-time faculty who work full-time in other professions. The researcher identified the goals of these faculty, and examined within-group differences based on academic discipline, gender, degree, institutional affiliation, years of teaching, graduate and undergraduate course level, and course content. A descriptive comparison to Angelo and Cross' (1993) original study was also performed.

The TGI was distributed to 484 practitioner educators from dissimilar institutions with varied missions and student populations. The majority of subjects were from the Utah Campus of the University of Phoenix, a private institution that focuses on the needs of working adults. Additional participants were selected from a small public four-year institution, a large four-year public university, and a large urban community college. The researcher received a 69% response rate from faculty who taught in nursing, education, business, and information systems. Eight items were added to the inventory in order to account for the independent variables stated above. Multivariate analysis of variance and discriminant analysis were used to compare group differences.

Swenson (1997) found that there were significant differences in teaching goals by academic discipline, course level taught, type of institution, and course content. A noteworthy finding was in reference to the qualitative or quantitative nature of a course. Though Angelo and Cross (1993) stated that discipline was the overall influencing factor on teaching goals, Swenson found that course content was the overriding factor in terms of setting goals. Additionally, the level at which the course was taught, either undergraduate or graduate, was another factor that was more significant than academic discipline. Though gender differences were found, they ceased to exist once measured within disciplines.

When Swenson (1997) compared his findings with those from Angelo and Cross's (1993) study, he found one critical difference. Practitioner educators placed greater importance on goals concerning student development and higher order thinking skills than did traditional part-time educators. Since Angelo and Cross presented limited data in terms of means and standard deviations, Swenson was unable to conduct a more in-depth analysis of the subject matter. Swenson concluded that the TGI is a tool that can be useful in measuring goals and increasing the focus on assessment and student learning. This, in turn, results in improved course planning and a clarification of instructional priorities by faculty and institutions.

Teaching Goals at Senior Research Universities

Johnson (1997) conducted a study of faculty teaching goals at senior research universities. The study included 640 faculty members from ten randomly selected senior research universities classified by the Carnegie Foundation for the Advancement of Teaching. A 55 percent response rate was received.

Johnson (1997) conducted a factor analysis on the TGI to determine which items were critical to and valid for her study. Since the TGI was developed and tested at mainly undergraduate four-year institutions and two-year community colleges, the validity of the instrument for senior research institutions was questionable. Seven factors emerged from this analysis and were used to form the goal clusters for the study. In outlining the clusters, three of the goal clusters from the original TGI remained, including basic skills, discipline-specific knowledge, and higher-order thinking skills. New goal clusters included cultural and societal appreciation, personal and professional development, work-related skills, and self-improvement.

Variables considered in the study by Johnson (1997) included academic rank, course level, tenure, and academic discipline. Seven one-way analyses of variances were conducted with the resulting goal clusters and significant differences were found with regard to academic discipline. This supports the work of previous researchers who also found academic discipline to be a significant factor in teaching goals (Angelo & Cross, 1993; Fox, 1997; Schwarze, 1996; Swenson, 1997). Specifically, Johnson found that faculty in accounting had significantly higher scores in the goal cluster of work-related skills and English faculty had significantly higher scores in cultural and societal appreciation, self-improvement, and basic skills, when compared across disciplines. Additionally, psychology faculty scored significantly lower on all goal clusters except one, discipline-specific knowledge, as compared to faculty in the other discipline areas. No significant differences in teaching goals were found among faculty in the disciplines of chemistry, math, computer science, and mechanical engineering.

The primary goal of faculty at senior research institutions was higher-order thinking skills. Johnson (1997) suggested that this was mainly due to the level of the course chosen by faculty in completing the survey. Approximately 57 percent of faculty chose a junior or senior level course and 20 percent chose a graduate level course in considering the goal statements provided on the instrument. This factor may have influenced findings based on the assumption that these advanced-level courses expect students to display a higher level of cognitive abilities (Johnson).

An additional finding in the study was in regard to differences among the types of institutions. The researcher found that goals differed among types of institutions, those being community colleges, four-year colleges, and senior research institutions. Johnson (1997) suggested that this was to be expected due to the advanced degrees and courses offered at upper level institutions. The researcher concluded that a significant factor in predicting teaching goals was course level.

Johnson (1997) also noted that a number of the teaching goals listed in the inventory were identified as non-essential or non-applicable among faculty at senior research institutions. She stated that this is probably attributed to the fact that the TGI was developed and tested with undergraduate, teaching institutions in mind, rather than graduate research institutions. Therefore, the validity of the instrument is uncertain for these types of educational institutions. Additionally, though class size was not included as a variable in this study, several comments received from faculty indicated that the size of the class (in particular, large class sizes) had an impact on their teaching goals for the course.

These studies conducted utilizing the Teaching Goals Inventory are varied not only by types of institutions chosen, but also by types of faculty, i.e., part-time, full-time, practitioner educators, and senior research faculty. However, there were consistencies in many of the findings. Discipline was found to be a significant factor in all of the studies in terms of teaching goals. Gender, though a significant factor in two of the studies (Fox, 1997; Swenson, 1997) was later concluded to not be as important when examined within the context of academic discipline. Additionally, Johnson (1997) and Swenson found that the level of the course being taught was a significant factor in relation to faculty teaching goals.

A variety of analysis techniques were used, including t-tests, ANOVA, MANOVA, and factor analysis. The research in this area, though limited, is widely varied in terms of theoretical framework, research designs, and analytical constructs. However, all have contributed to the body of literature on teaching goals, particularly in relation to classroom assessment and the Teaching Goals Inventory.

Web-based Instruction

Web-based instruction (WBI) is a form of teaching that utilizes a significant amount of technology and is very different from traditional, face-to-face instruction, as it does not require the teacher and the learner to be in the same place at the same time. Although education over the Internet has existed since the mid-1980s, it is only recently that this innovation has been espoused by numerous educational institutions (Simonson, Smaldino, Albright, & Zvacek, 2000). According to Barnard (1997), the internet is more than just a one-way communication mechanism, but a way for learners to access a number of resources for a class, including the actual course materials. Additionally, the web provides a manner in which students can communicate with the instructor and other students in the class. This learning environment allows students who would normally not be able to obtain an education, due to geographical distance or personal circumstances, to do so without having to physically attend classes.

Daugherty and Funke (1998) referred to WBI as an interactive method for creating a "global community" (p. 22). Since learners are not restricted by time or place, distance education on the Web allows students to access all types of information at their leisure and apply it directly to the context in which it is needed, whether it be social, educational, or work related (Ball & Crook, 1997). The Web offers an asynchronous setting, one in which the learner and the teacher do not have to be communicating at the same time, enabling students to access information for their courses at times that fit their lives (Barnard, 1997).

The resources provided by the Web are plentiful. According to Daugherty & Funke (1998), the Web supports learning in a way that lectures and textbooks cannot, as information is readily available when students need it. Learners are exposed to a variety of resources in terms of professors, instructional materials, and methods, rather than being limited to what exists in their geographic locations (Ball & Crook, 1997).

Menges (1994) stated that the web and other technological advances are changing higher education dramatically. Teaching via this medium involves a great deal more than using a computer and posting class notes to a website. This singular view is considered immature and does not produce quality courses (Moore & Kearsley, 1996). "In this information environment, teachers do not control access to information as they once did. Instead, it is the students who directly receive and interact with data of all kinds. They can transform information from one medium to another, and they create new knowledge as a result of their interactions with teachers and other students" (Menges, p.183).

This method for teaching has created new and different learning opportunities for teachers and students alike. Faculty using the Web as a teaching medium should consider reevaluating their methods to fit the needs of the online environment. Menges (1994) stated that learners currently have direct access to information and are no longer required to obtain this information from the teacher. They can learn with the instructor and through interactions with other students. Arreola (1995) noted that, in using electronic forms of communication such as the World Wide Web in teaching, teachers do not have direct access to students in terms of hearing them speak and seeing their reactions, thus eliminating a major part of traditional teaching environments. Keeping this in mind, it may be necessary for faculty to reevaluate their goals, as well, in order to accommodate this shift in instructional methods and continue to teach effectively. Arreola (1995) discussed the view that teaching with electronic communications creates certain requirements not only for the student, but for the teacher, as well. He stated, "The conditions under which the teacher is asked to teach can vary considerably from the conventional classroom and thus the preparation required to teach effectively can also vary significantly" (p. 225).

Collins (1991) described several shifts that need to take place in education due to the increasing use of computers and technology and stated that the rise in computer and electronic networks will have a marked effect on teaching and learning practices. One of the shifts discussed is a change from teaching to an entire class to smaller-group and individual instruction. In many cases, students are able to learn at their own pace and travel in different directions than their classmates. This is an adjustment for many educators, as getting to know and understand students on an individual basis may be necessary.

Another shift encompassed styles of teaching, specifically the teacher moving from a lecture style of teaching to a coaching style (Collins, 1991). In many computer-assisted classrooms and distance learning situations, the teacher is a facilitator of learning, rather than a director. This sentiment is echoed throughout the literature. The roles of the learning facilitators must be defined by the needs of the learners, and not by the needs of the dean, timeframe, or textbook. Faculty should play the roles of mentors and consultants to the learners (O'Banion, 1997). Chizmar and Williams (1996) recognized this shift in teaching style from a "sage on the stage," where one simply conveys information to the student, to a "guide on the side," where the faculty member guides the student into discovering knowledge independently.

Student assessment is another issue brought forth by Collins (1991), as classroom tests become an inappropriate method for evaluating students. Performance based on projects, progress, and effort should be used as an alternative form of assessment (Collins). Additionally, visual technology such as computers and television, bring to light the shift from verbal thinking to the integration of verbal and visual thinking. According to Collins, "Computers and electronic networks provide instant access to the world's accumulated knowledge, in both verbal and visual forms. This development may slowly undermine the primacy of the book, the lecture, and their accouterments, such as the multiple-choice test and the recitation class" (p. 30).

McKeachie (1994) presented similar findings in his research on the effect technology has on the role of college teachers. He stated that teacher presentations will focus more on providing information to resolve problems and answer questions, rather than presenting new information for learners. The author identified six shifts in professor roles that will be challenging over the next decade. The first of these shifts is from the professor "covering material to assisting students in sampling material" (McKeachie, p. 188). Due to the large amount of material needing to be covered, professors will only be able to use what is considered essential, and the student must be able to "sample" from the remainder. Along with this shift is developing criteria to determine what is important, rather than developing "neat little packages" for the student. These criteria can be discussed and decided upon by the class, and must be specific to the technological medium used. "When students deal with electronically stored items – literary works, anthropological artifacts, historical photographs – important contextual cues are lost. One cannot touch the artifact, heft the original manuscript while searching for a passage, or easily detect an image's cultural and social context. One comes to appreciate how decontextualized most electronic information is" (McKeachie, p. 189).

The third shift involved grading students. Professors will not be able to assess students based on comparisons anymore, but must develop standards for evaluating each student as an individual. This is because electronic technology allows students to learn at their own pace and pursue different objectives. "When the student pursues distinctive objectives, the teacher can no longer use uniform standards of achievement and uniform rates of learning to evaluate student work. Instead it is necessary to negotiate learning objectives and rates of progress that reflect individual interests, abilities, and needs" (McKeachie, 1994, p.189). In addition to grading considerations on an individual basis, these concerns flow through to collaborative work. When technology is added, the roles of group members are varied, and it is difficult to determine how to reward group members, either based on the proportion of work completed, or on individual work completed (McKeachie).

Issues of fair use and copyright are multiplied, as sources can be easily accessed and modified in a number of mediums. Using only public domain items may limit the quality and depth of the work, as students shift from merely reproducing knowledge to developing original works. It can often be challenging to use tests with electronic technology, though requiring students to examine problems and develop creative solutions for these problems is another form of testing their creativity (McKeachie, 1994).

In comparing the teaching techniques of professors in a traditional environment with those in a distance environment, the available technology needs to be considered. Professors in a traditional classroom have a variety of assets at hand, such as handouts, a chalkboard, and the ability to acknowledge immediate feedback from their students, in the form of verbal and non-verbal communication. These are options generally not available to the distance education instructor (Arreola, 1995).

O'Banion (1997) echoed many of these shifts associated with increased technology use when he spoke about the shift from a teaching to a learning paradigm, as it creates and offers as many opportunities as possible for student learning. For example, through the use of technology, students are provided with a world of learning opportunities that do not limit them to the traditional classroom environment. They are able to be creative with their learning styles.

Teachers will also need to assist learners in participating in learning activities, expanding their learning by offering more group and team-oriented projects, as opposed to individual learning assignments. O'Banion (1997) stated that the learning facilitators must play the roles of mentors and consultants to the learners. Faculty need to break away from the traditional methods of assessment and begin to use learning as the measurement of success. Zukan (1999) discussed his experience of moving from teaching in a traditional environment to an online environment: "My challenge then became to adapt my model of participatory teaching and learning for distance education" (p. 496).

Technology, particularly web-based instruction, has affected a number of aspects of teaching, including course content, teaching roles, instructional methods, assessment strategies, interaction, and communication. Research has shown that teaching online requires different skills than what is needed in the traditional, face-to-face environment, as well as a different pedagogy (Fetherston, 2001; LaMonica, 2001). Given the effects technology has had on the teaching and learning environment, it is possible that faculty teaching goals and overall teaching effectiveness may also be influenced. The following sections describe the specific changes faculty have had to adjust to in adapting their traditional courses to the online environment, and provide insight into the potential need for faculty teaching goals to be attuned, as well.

Content

Faculty must make a number of adjustments when transferring the content of their courses to the online environment due to organization, format, and legal issues. In a study conducted by LaMonica (2001) in which both online instructors and students taking an online course were surveyed, results indicated that the most important element in a successful web-based course was the format of the course content. Both groups felt that the content should be adequate for the online environment and organized in an easy-to-follow manner. Although this may be inherent in a traditional course, organizing the content of a course so that it is readily understandable by a student who is not able to verbally clarify any questions can be a challenge for many instructors teaching online.

Hoffman (2001) stated that the format of the web obligates faculty to more carefully organize their content in terms of specific materials that normally would be verbally or visually transmitted in a traditional classroom. For instance, overheads with figures of tables need to be transformed into a different format such as slides and pictures may need to be manually scanned in. Additionally, many faculty must adapt their content to the format provided by the web and by many web-authoring tools, which can limit the presentation of information (Dabbagh, 2000). Faculty who traditionally use videos in their courses may also be challenged, as many students do not have the computer capabilities to view streaming video in a reasonable amount from their locations, forcing faculty to find alternative methods of preparing their content.

Issues of copyright have also affected what can be displayed on a class website. Faculty may need to reevaluate instructional supplements that would regularly be given to students in a traditional class or recited by the professor. Once translated into the online environment, the legality of the written word must be taken into consideration. This applies not only to written content, but the use of video, pictures, and information gleaned from other websites. The restrictions placed on the content of a course due to the ambiguous copyright issues that currently exist for the web-based environment may make many online instructors wary of what content to include in their courses.

Teaching Roles

In research conducted by Dillon and Walsh (1992) with regard to faculty teaching roles in the distance education environment, it was found that faculty roles do change from the traditional classroom setting to the distance education environment. Zukas (1999) found that students in online courses were more interested in discussing topics with other students, rather than with the professor, thereby claiming an ownership of the course that was different than exists in a traditional course. In this sense, the professor serves as a mentor, coordinator, and facilitator of learning rather than a conveyor of information.

Since content is easily accessible on course websites, faculty are able to take on a different role of content facilitator, rather than provider (Willis, 1994). Gillespie (1998) stressed the importance of providing experiences that increase higher-order cognitive skills for *learners*, as opposed to simply transferring content to the student. In reference to faculty, Gillespie stated, "With their new online courses they can spend *more time* planning and facilitating learning and developing higher order thinking skills and *less time* presenting content" (p. 39). This is a significant shift in the roles faculty traditionally play in the classroom, where the main focus is on the dissemination of knowledge to students.

A report from the American Association of Community Colleges (2000) stated that faculty must refocus their energies to concentrate more on setting the appropriate climate and learning conditions, as well as on setting their goals and sequencing of content in order to accommodate this new method of teaching. Dringus (1999) expressed the need for faculty to reevaluate their primary roles as leaders in the traditional classroom to being a resource for students in the online classroom, serving as a guide for problem-based learning as opposed to a lecturer. Additionally, she stated that faculty must move beyond the traditional role of knowledge expert in order to support interactive learning and should strive to find a balance between not only providing information, but facilitating online discussion and allowing learners to take control of the learning environment.

Teaching Methods and Assessment Strategies

Research has shown that developing and teaching web-based courses demands adaptations in teaching practices (Barr & Tagg, 1995; Billings, 2000). According to a report by the National Center for Education Statistics (2001), lecturing has been the primary method of teaching in traditional higher education. Specifically, 83% of faculty and staff in postsecondary education reported using this style as their main instructional method. However, this method is not only difficult to achieve in the online environment, but it is also not very productive. Faculty who tend to use this method of teaching are realizing that they need to find alternative methods in order to keep students engaged in their courses.

In order to address this issue of engaging students, interactive methods such as discussion groups and bulletin boards are becoming increasingly utilized in web-based courses. Online discussions and group projects in which students are required to work with each other in the online environment are other alternatives that faculty are using to enhance the content of a course. Whitesel (1998) stated that this new technology has not only changed teaching methods, but has actually changed the learning experience for faculty and students.

Teaching in the online environment requires advance preparation, as once the content and methods have been developed, the transfer of this information to the web-based format takes additional time. Faculty are often not able to "wing it" in the online environment as they may do in the traditional classroom or make changes easily on short notice, such as changing lesson plans or topics to include recently acquired information or alternative formats such as playing a video clip (Carnevale, 2001; Zukas, 1999). This affects many faculty who are used to adjusting their lessons to keep up with current events or changes in the curriculum.

In terms of grading procedures, 61% of traditional faculty tend to use competency-based assessments in their undergraduate classes (National Center for Education Statistics, 2001). This method of assessment, however, is not always possible in the online environment. Faculty are having to find alternative ways to test student learning in their courses. Research conducted by Fetherston (2001) examined alternative methods of assessment that consider measuring a synthesis of student learning rather than the traditional, exam-based forms of assessment. He stated, "assessment needs to be changed from methods, which focus on recognition, recall, are based on course objectives and measure surface learning, to assessment focussed on students' own conceptions, which is holistic, measuring deep learning, long lasting knowledge, and allowing students to express interpretations" (par. 29).

Interaction and Communication

Interaction in the online environment has greatly affected how faculty teach their courses. Unlike the informal and often spontaneous interactions that may occur in the traditional, face-to-face classroom, faculty find themselves planning for these kinds of interactions in the online environment (Carnevale, 2000). Web-based courses are generally asynchronous in nature, meaning that students are able to work at their own pace and do not require real-time interaction with the instructor. Though there may be synchronous elements of the course, such as online chat discussions that occur in real-time, these are often limited. Due to this lack of verbal communication among faculty and students, email is often used as one of the main forms of interaction. According to a study conducted by the National Education Association (2000), 83% of faculty teaching a web-based course use email as the dominant means of communication with students and a significant portion of these faculty never have any kind of face-to-face interaction with their students.

This is a considerable change in the way faculty have traditionally communicated with students. Teaching students in a traditional classroom, faculty are able to speak directly with students, either before, during, or after class. This may not be a possibility in most web-based courses, leaving faculty to find alternative ways of communicating with students. Additionally, the importance of body language and verbal tone are two crucial factors that essentially do not exist in the online environment. Written communication may often be interpreted in different ways than originally intended, and misinterpretation of statements can result in mixed ideas. Lynch (1998) emphasized the importance of communication in online learning and stated that, "Internet communication is the glue that holds a learning community together; it is important that the communication be informal, that it allows for emotional expression, and that it is reinforced throughout the learning process" (par. 9). The effective use of chat rooms, news groups, bulletin boards, and email may assist faculty in increasing the quality of communication with students.

Feedback is a significant concern for faculty and students in web-based courses. A study conducted by LaMonica (2001) found that receiving timely and appropriate feedback was the second most important aspect to students and faculty in the online environment, after content. In a traditional, face-to-face course, feedback is often implicit in nature due to body language, eye contact, and physical interactions. For instance, faculty can assess whether students have understood instructions simply by looking around the classroom at the faces of students for signs of confusion or comprehension. Additionally, physically handing an instructor an assignment confirms that he or she has received it. This is not always the case when a student in the online environment emails an assignment to a professor and receipt is not acknowledged, leaving the student unclear as to whether the assignment reached its destination (Graham, Cagiltay, Lim, Craner, & Duffy, 2001).

In order to accommodate the needs of the online environment, faculty may need to adjust their communication styles. Procedures that are normally taken for granted in the traditional environment, such as receiving an assignment from a student, should be acknowledged in writing in order to allay any concerns. Faculty are not able to receive immediate feedback from students as they normally would, as students may be at various stages of learning the material and may not be able to supply appropriate feedback

(Henderson, 2001). These are considerations that faculty must address when adapting to the web-based learning setting.

Instructional Goals

Considering the marked effects technology, particularly web-based instruction, has had on teaching in terms of the content of a course, the role of the instructor, teaching methods and assessment strategies, and communication and interaction between students and faculty, it is reasonable to suggest that faculty teaching goals and overall teacher effectiveness may also be affected. In reference to teaching in the online environment, Willis (1994) stated that "distance education demands that goals be clear, concise, and measurable" (p. 280). However, when translating teaching goals to the online environment, this may not always be the case. This study will focus specifically on the effects of web-based instruction on the teaching goals of faculty who have taught or are currently teaching online.

Additionally, studies have been conducted examining the teaching goals of distinctive populations of faculty, such as part-time faculty, practitioner educators (part-time faculty who work full-time in other professions), and faculty at senior research institutions (Johnson, 1997; Schwarze, 1996; Swenson, 1997). These studies found that factors such as academic discipline and teaching experience have an impact on the teaching goals of these different groups of faculty. In particular, it was found that faculty who teach in dissimilar disciplines had different teaching priorities, and their goals and values were significantly different from each other (Angelo and Cross, 1993; Fox, 1997; Johnson, 1997; Schwarze, 1996). Gender was also found to affect teaching goals, though was deemed not significant when examined within the context of academic discipline (Fox; Swenson).

Fox (1997) found that the number of years of teaching experience had a significant effect on faculty teaching goals in that faculty who had taught longer tended to feel that their role as a teacher was to be the "expert" and convey knowledge to the student, rather than to develop higher order thinking skills with their students or focus on work and career preparation. Given these findings, this study will also examine the factors of teaching experience and teaching status to determine whether the results are consistent with previous studies in their effects on the instructional goals of faculty who teach web-based courses.

The Community College Environment

Specifically relevant to the widespread development of distance education programs is the community college. The community college has traditionally been referred to as the "people's college," committed to providing access, opportunity, and a full scope of educational areas to those that attend (Boone, 1997). According to Inman, Kerwin, and Mayes (1999), "Because they serve a diverse population that is often geographically isolated, community colleges have been at the forefront of distance learning technology" (p.581). The commitment of the community college to serving students and the flexibility within which they operate puts the community college in a prime position to lead distance learning in higher education.

Community colleges are able to play a variety of roles in this new technological era, in part due to their well-developed student support systems. Johnstone & Tilson

(1997) stated that the community college "can play the role of the sending institution, providing instruction to students electronically and be a student access and service center within a virtual university" and "can become a one-stop shopping place for its local constituents" (p. 71). According to a recent study by the National Center of Education Statistics (1998) regarding distance education instruction, faculty who taught at two-year public institutions were more likely to teach a distance education class utilizing a computer, TV-based, or other non face-to-face medium than faculty at four-year private liberal arts institutions.

Doucette (1993) stated that community colleges have lead the nation in terms of applying technology to teaching and learning, and offered a number of reasons for this leadership role. For instance, community colleges are driven by their distinctive missions, which often emphasizes the importance of serving a high number of under-prepared students. Technology has been able to assist community colleges with effectively meeting this challenge. Along with this ambition to serve as many as students as possible in an efficient manner is the community college's focus on teaching. Unlike many four-year institutions, where research is considered to be the most important aspect of a faculty member's position, teaching continues to be rewarded at community colleges as the primary purpose for an instructor (Cohen and Brawer, 1996; Doucette; Huber, 1997). Due to this factor, many faculty strive to improve their teaching and look toward technology to assist them in becoming more effective.

Boone (1997), in discussing community colleges, stated "The continuing knowledge explosion, coupled with major breakthroughs in technology, is having and will continue to have a significant impact on the curricula that are designed to prepare the nation's workforce. It is critical that the content of these curricula remain on the leading edge" (p.11). The community college is the natural educational tier to head this technological transformation in higher education. Many of Florida's community colleges are taking the lead in offering distance education programs. According to the Florida Community College Distance Learning Consortium (2001), every community college in the state offers some sort of distance learning course. This study will include faculty members from Florida's community colleges who teach both traditional and web-based courses.

Teaching Status

At a time when college and university budgets are decreasing, the use of part-time instructional faculty is consistently increasing, as part-timers help to conserve overall funding (Gappa, 1984; NCES, 1993b). Rhoades (1999) noted that with new instructional technologies, the proportion of full-time faculty has consistently decreased. It is not that these faculty are being replaced by the technology, but rather the number of part-time faculty has increased. In a recent study conducted by the National Center for Education Statistics (1993a), approximately sixty-two percent of all instructional faculty teaching for-credit courses in two-year public institutions were employed part-time. This is a significant portion of instructional faculty. Additionally, almost half of all part-time faculty hold positions outside of their institutions (NCES, 1993b).

Research has shown that there exist differences between part-time and full-time faculty on a number of factors, including teaching experience, instructional goals, and the use of instructional media (Friedlander, 1980; NCES, 1993b; Schwarze, 1996). In a study conducted by Friedlander (1980) that analyzed data from several national studies on full-time and part-time faculty in the community colleges, one main difference discovered between the groups was in terms of teaching experience. Full-time faculty tended to have more teaching experience than part-time faculty, with 90 percent of full-timers having more than three years of experience as compared to 55 percent of part-timers having this same experience. In a study conducted by Lowther, Stark, Genton, and Bentley (1990), main differences between full-time and part-time faculty were in terms of credentials in their disciplines. Full-time faculty had a stronger background and had usually more teaching experience than part-time faculty, indicating that this lack of experience and preparation could potentially have an impact on their course plans.

Gappa (1984) stated that community colleges make the most use of part-time faculty and have been more concerned about their teaching effectiveness than four-year institutions. In a study conducted by the National Center for Education Statistics (1993b) comparing full-time and part-time faculty, seventy-nine percent of full-time faculty felt that teaching effectiveness should be the primary factor in deciding promotions, as compared with ninety-four percent part-time faculty.

In terms of instructional technology, part-time faculty tend to spend a greater percentage of their time on activities related to teaching and are more likely to use computer-aided instruction for their courses (NCES, 1993b). Friedlander (1980) found that more full-time faculty (45 percent) than part-time faculty (33 percent) stated that they used instructional media in their classes. Additionally, in a recent study conducted regarding distance education instruction, a higher proportion of classes taught by part-time faculty were distance learning classes, as compared to the proportion of classes taught by full-time faculty (National Center for Education Statistics, 1998). Friedlander concluded that these factors, along with teaching experience, inevitably influenced a faculty member's ability to conduct a course, as well as their teaching effectiveness. This, in turn, has a significant effect on the overall quality of instruction at a college, which is likely to be affected by the proportion of full-time to part-time faculty (Gappa, 1984).

Schwarze (1996) conducted a study with part-time and full-time faculty utilizing the Teaching Goals Inventory, in which teaching status was used as the grouping variable. The researcher found significant differences between the groups in terms of prioritizing various teaching goals. Specific differences were found for the goal clusters liberal arts and academic values, work and career preparation, and personal development, as full-time faculty prioritized personal development as least important to them, while part-time faculty tended to place this goal as third most important. Additionally, whereas part-time faculty chose liberal arts and academic values as least important, full-time faculty placed this fourth in importance. Based on the pertinent literature related to differences between part-time and full-time faculty, teaching status will be used as a covariate in this study in order to control for any possible effects this variable may have on faculty teaching goals.

Years of Teaching Experience

Number of years of teaching experience has been shown to be a highly influencing factor on various areas related to teaching and learning including teaching effectiveness, instructional methodologies, teaching goals, and attitudes towards teaching (Cohen and Brawer, 1977; Fox, 1997; NCES, 1993a; Rabalais, 1977). Additionally, the number of years of teaching experience is one of the most commonly used indicators of teaching effectiveness for salary decisions in many community colleges, and tends to exhibit a positive effect on salaries as experience increases (Rabalais, 1977; Webster, 1995).

Often, the number of years of teaching experience is correlated with age, as younger instructors tend to have less experience (Brawer, 1988). A study conducted by Cohen and Brawer (1977) found that instructors who were younger spent more time with students outside of the classroom and had a greater concern for their students, whereas older instructors were more involved with the managerial aspects of teaching, such as research and professional committees.

In a study examining instructional faculty at public two-year institutions, differences were found in terms of hours worked, number of students taught, and teaching methodologies between faculty who had varying years of teaching experience. For example, faculty who had taught less than 10 years worked more hours, yet taught a smaller number of students than faculty who had more than 20 years of experience. Additionally, faculty who had taught for more than 20 years tended not to use computer-assisted instruction and were also less apt to request student presentations in their course requirements (NCES, 1993a).

Fox (1997) conducted a study utilizing the TGI to assess the affect of academic culture on teaching goals. Number of years of teaching experience was found to be a significant factor in terms of two of the instructional goals on the TGI, higher order thinking skills and work and career preparation. Faculty who had taught for a longer period of time considered these goals as less important than faculty who had taught for shorter lengths. In follow-up analysis, Fox confirmed this finding, stating that faculty with more experience tended to consider themselves as experts whose responsibility was to convey knowledge to the student, rather than to assist students with higher order thinking skills such as learning to synthesize knowledge. Given the possible effects of number of years of teaching experience on the outcome of instructional goals, this variable will be used as a covariate in this study.

Conclusion

This review of literature was conducted in order to gain a deeper understanding of the process of setting instructional goals and assessing teaching effectiveness through classroom assessment and the relationship this has to the online teaching environment. A number of assessment feedback models that have been developed to assist faculty in improving the quality of their teaching were reviewed. Over the past twenty years, theorists such as Lowman (1984), Chickering and Gamson (1987), and Weimer (1990) have addressed the concept of teacher effectiveness in the classroom. However, they tended to offer more general suggestions for improving teaching through assessment.

The model developed by Angelo and Cross (1993) goes one step further and provides faculty with a means by which to assess effectiveness and a specific plan for improvement through the use of the Teaching Goals Inventory and Classroom Assessment Techniques. In their model, classroom assessment is an activity that is designed for the teacher and the learner to experience first-hand in order to enhance the learning process.

The changing role of the professor in terms of the needs of the web-based setting was also examined, which assisted in offering an in-depth understanding of the various aspects of teaching that are affected by this new learning environment, including teaching strategies and techniques, course content, student assessment procedures, and teaching goals. Faculty are learning to readjust their teaching strategies, to facilitate discussion rather than lecture, as well as create assessments that assist students in synthesizing knowledge instead of simply memorizing information (Chizmar and Williams, 1996; Collins, 1991; McKeachie, 1994; Menges, 1994; O'Banion, 1997; Zukan, 1999). Additionally, the research has shown that faculty must adapt their content to fit the online learning setting and prepare their materials in advance to meet the confines of the web-based format (Arreola, 1995; Dabbagh, 2000; Hoffman, 2001).

Research utilizing the TGI in relation to distinct groups of faculty was discussed, providing a basis for how this instrument has been used in different areas. Studies conducted comparing full-time faculty versus part-time and practitioner faculty found significant differences between the groups based on this variable of teaching status, as well as within academic disciplines (Schwarze, 1996; Swenson, 1997). Fox (1997) discovered that the number of years of teaching experience was a significant factor in terms of teaching goals, as faculty who had taught longer tended to emphasize certain goals, such as higher order thinking skills, over others. These variables will be considered in this study and the information presented in this review will be used to identify factors that may influence the instructional goals of faculty who teach web-based courses.

CHAPTER III

METHODOLOGY

As outlined in Chapters 1 and 2, the purpose of this study was to identify the instructional goals of faculty who teach web-based courses in two-year community colleges and compare these to the teaching goals of faculty who teach traditional courses. Angelo and Cross' (1993) Teaching Goals Inventory was used to measure these instructional goals and any significant differences were noted. This chapter summarizes the specific research questions for this study, as well as outlines the statistical methods and procedures that were used to collect and analyze the data.

Research Questions

The guiding research question for this study is:

1. Are the instructional goals of community college faculty who teach online, web-based courses different from those of community college faculty who teach a traditional, face-to-face course?
2. Along what dimensions are the instructional goals of community college faculty who teach online, web-based courses different from those of community college faculty who teach a traditional, face-to-face course?

In the process of gathering data to respond to this question, the following additional or collateral questions were also researched:

a. What are the teaching/instructional goals of community college faculty who teach online, web-based courses?

b. Are the goals of community college faculty who teach online, web-based courses affected by teaching status (full-time or part-time) and/or number of years of teaching experience?

c. How do the goals of community college faculty who teach online, web-based courses compare to the goals of faculty in a nationwide sample surveyed in Angelo and Cross's original study conducted in 1993?

Population

The population for this study was faculty members teaching in two-year public community colleges in Florida. This population included faculty who have taught only traditional, face-to-face courses, faculty who have taught only online, web-based courses, and faculty who have taught in both environments. Both part-time and full-time faculty were included in this study.

Sample

The sample consisted of faculty members from two-year public community colleges in Florida. The size of the sample for the study was decided using a sampling formula provided by Ary, Jacobs, and Razavieh (1996) which included factors such as effect size, significance level, and probability of rejecting the null hypothesis. Cohen (1988) recommended using a small to medium effect size when trying to detect something that may not be overtly obvious. A minimum effect size for these purposes is suggested to be between .20 and .50. Additionally, Light, Singer, and Willet (1990) suggested using a power of at least .80 in order to include enough participants in the sample to detect at least medium-sized effects. The following sample formula from Ary, Jacobs, and Razavieh (p. 193) was used to calculate the sample size for this study.

$$N = \left(\frac{1}{\Delta}\right)^2 (z\alpha + z\beta)^2$$

N = the number needed in the sample
Δ = the specified effect size
$z\alpha$ = the z-score for the level of significance
$z\beta$ = the z-score for the desired probability of
rejecting the null hypothesis

Using an effect size of .50, a significance level of .05, and a power of .90, the minimum total calculated sample size is 53 for each group of faculty. Having four groups of faculty (discussed later in this chapter), the minimum total calculated sample size is 212. This number is supported by Light, Singer, and Willet (1990), who indicated that for a small to medium effect size, a power of .90, and an alpha of .05, an acceptable sample size should be between 113 and 1,047 people. Given the method of analysis and the number of independent variables, as the more variables that are included the greater the sample size required, the sample size per group was increased to a minimum of 60 faculty members. (Jacobsen, 1998; Skirvin, 1998).

Variables

The independent variables in this study included method of teaching (online or traditional), teaching status (full-time or part-time), and number of years of teaching experience. These variables were essential to the study and have been shown to be highly influencing factors on course goals (Fox, 1997; Johnson, 1997; Schwarze, 1996; Swenson, 1997). Academic discipline, another potentially significant factor, was controlled for by including an equal number of same-type courses in each of the faculty groups. Courses included in the study were from a variety of academic disciplines and inclusion was contingent upon the number of responses received from each academic area. Only classes being taught for credit were used for this study.

The main dependent variable in this study was teaching goals of faculty. Specifically, the TGI by Angelo and Cross (1993) groups teaching goals into six clusters or dependent variables: higher order thinking skills, work and career preparation, basic academic success skills, discipline-specific knowledge and skills, liberal arts and academic values, and personal development.

Research Design

A one-way factorial design was used in this study. Faculty were divided into four groups, depending on their teaching experiences:

1. Faculty who have taught only traditional, face-to-face courses who completed the TGI for a traditional course;
2. Faculty who have taught both traditional, face-to-face courses and online, web-based courses who completed the TGI for a traditional course;
3. Faculty who have taught both traditional, face-to-face courses and online, web-based courses who completed the TGI for a web-based course; and
4. Faculty who have taught only online, web-based courses who completed the TGI for a web-based course.

According to the Electronic Catalog of the Florida Community College Distance Learning Consortium (FCCDLC) (2001), each of the 28 public community colleges in Florida offers some type of distance learning course. The number of online course offerings was researched for each college through this catalog. In order to ensure a sufficient number of participants for the study, a preliminary review of the number of online courses offered by several colleges for the Fall 2001 semester was conducted and the researcher concluded that there was a sufficient sample of faculty available for this study.

Each of the 28 community colleges has a representative appointed to the FCCDLC. A letter of endorsement from the Associate Director of the FCCDLC was sent to all college representatives, in order to help promote the study on their campuses. In order to obtain the most complete listing possible, representatives were asked to supply a list for their particular institution of all faculty members and their email addresses. These lists included faculty who teach traditional and online courses.

It was decided that there would be a greater response rate if all faculty members were invited to participate in the study. Participants were questioned as to whether they had ever taught an online or traditional course and were placed in the appropriate group. It was noted that there might not be enough faculty to constitute the fourth group, faculty who have taught only online, web-based courses. As was expected, there were not enough faculty to populate this group and, therefore, it was excluded from analysis.

Instrumentation

The instrument used for this study was the Teaching Goals Inventory, developed by Angelo and Cross (1993) (See Appendix A). The TGI was field-tested several times over a period of four years (1986 - 1990) at numerous institutions, from the two-year public college to the four-year private university.

The inventory consists of 51 items on a one to five Likert scale, with ratings of essential (a goal you always or nearly always try to achieve), very important (a goal you often try to achieve), important (a goal you sometimes try to achieve), unimportant (a goal you rarely try to achieve), and not applicable (a goal you never try to achieve). Once the teacher has prioritized the items, the statements are scored and grouped into six goal clusters: (a) higher order thinking skills, (b) basic academic success skills, (c) discipline-specific knowledge and skills, (d) liberal arts and academic values, (e) work and career preparation, and (e) personal development.

Angelo and Cross (1993) constructed the TGI based on past efforts and research on instructional goals, such as Chickering's (1969) seven vectors regarding student development, and Astin's (1977) research on the outcomes of college, among others. Angelo and Cross reviewed studies regarding the reactions of students to college instruction, as well as work developed by the Educational Testing Service. In all, over 35 years of research were reviewed in order to develop the TGI.

For this study, additional items were added to the instrument in order to be able to assess certain demographic factors. These questions addressed the areas of teaching status (full-time or part-time), method of teaching (online or traditional), and number of years of teaching experience.

Item Development and Validity

In constructing the TGI, several approaches were taken to develop each item of the inventory. Angelo and Cross (1993) began with identifying broad, complex goals discovered in the literature and broke them down into specific and explicit statements. Then, the researchers evaluated these items from the point of view of a teacher and intuitively grouped them together.

Cluster analysis was then used on the items. According to Angelo and Cross (1993), this type of analysis consisted of "administering the TGI to a large number of people and then correlating every item with every other item to see which items 'cluster' together. . . Once items are grouped together on the basis of their intercorrelations, there is the task of identifying a common dimension that runs through all the items in that cluster" (p. 16). The researchers used this process to develop the six different clusters of the TGI (Higher Order Thinking Skills, Work and Career Preparation, etc.).

Due to the nature of this type of analysis, the resulting clusters tended to be uneven in terms of the number of items in each cluster, and were difficult to interpret. In addition, "clusters derived solely by statistical means can lack face validity" (Angelo & Cross, 1993). Therefore, the researchers conducted another type of cluster analysis, Q sorting, to assist in establishing content validity. According to Best and Khan (1998), "Q methodology, devised by Stephenson (1995), is a technique for scaling objects or statements. It is a method of ranking attitudes or judgments . . . and is particularly effective when the number of items to be ranked is large" (p. 322). Generally, participants are asked to rank order or group a list of statements in order to "sort" them on a scale, i.e. strongly agree to strongly disagree. The process tends to be somewhat subjective, and there is typically no right or wrong answer.

Angelo and Cross (1993) sent the revised TGI to eighty-five faculty development educators throughout the United States. These teaching and learning practitioners were asked to group the statements of the TGI into goal clusters, and to add any items they thought were appropriate or eliminate any items they believed to be irrelevant. In order to ensure consistency, they were also given specific guidelines, such as including each goal statement in only one goal cluster, and creating between five and eight clusters. Angelo and Cross received a 61% response rate and used the results of this, along with that of the Q sort procedure, to make final revisions on the TGI.

A number of analyses on the TGI were performed through its many administrations to assure validity of the instrument. The first version of the TGI, completed in 1986, went through a pilot test with faculty from Bradford College in Massachusetts. In 1987, it was tested again with 200 randomly selected faculty from Miami-Dade Community College, the largest and one of the most diverse community colleges in the country. The researchers received a 70 percent response rate that was considered representative of the population, due mainly to the random selection process. Descriptive and cluster analyses were conducted on the data, as described above, and the researchers revised many of the goal statements for greater clarification.

In 1988, Angelo and Cross (1993) conducted another test of the TGI, though on a larger scale. Twenty-nine colleges throughout the country were selected to participate, including private and public institutions, and two-year and four-year institutions. They received a response from 1,856 faculty members, a 62 percent response rate from four-year colleges, and a 36 percent response rate from community colleges. The researchers "conducted extensive item analyses on the spring 1988 survey results, as well as cluster analysis and factor analysis, designed to reveal how items relate to each other empirically" (p. 15). Once again, as a result of the analyses, items were rewritten and new items were constructed to target the main themes of each of the clusters. Finally, after completing the analysis from the 1998 administration of the survey, Angelo and Cross conducted one more revision of the TGI, in order to ensure the most valid and inclusive list possible of teaching goals and their corresponding clusters for the final inventory.

Reliability

The final version of the TGI consisted of 51 goal statements, and one final statement regarding the instructors' view of their primary role as teacher. In 1990, Angelo and Cross (1993) conducted one more administration of the TGI. The inventory was sent to faculty members at 32 institutions, both private four-year institutions and public two-year institutions. A total of 2,824 faculty returned the survey, for a response rate of 65 percent. From this sample, Angelo and Cross computed alpha coefficients to test for reliability and internal consistency of each of the goal clusters, as can be seen in Table 1 (p. 17). In general, when using an instrument that is set on a Likert scale, where there is no absolute right or wrong answer or where attitudes are being assessed, it is customary to use the coefficient alpha measure (Ary, Jacobs, & Razavieh, 1996).

Table 3.1 Coefficient alpha reliabilities for final TGI clusters. From *Classroom Assessment Techniques: A Handbook for Teachers*, by Angelo, T. and Cross, K.P., 1993, p.17.

Cluster Number	**Cluster Name**	**Alpha Coefficient**
I	Higher-Order Thinking Skills	(.77)
II	Basic Academic Success Skills	(.79)
III	Discipline-Specific Knowledge and Skills	(.71)
IV	Liberal Arts and Academic Values	(.84)
V	Work and Career Preparation	(.85)
VI	Personal Development	(.86)

Research has shown that determining the reliability level depends on how the results of the survey will be used. If the results will be used for research purposes or for making decisions about groups, a reliability coefficient of 0.50 or 0.60 is acceptable. However, if the survey will be used to make decisions about individuals, then higher reliability levels are needed (Ary, Jacobs, & Razavieh; Fink & Kosecoff, 1998). Reliability levels for the surveyed groups in the curent study were included in the final analysis.

Data Collection

Once the faculty members from the institutions were identified, they were contacted via email to complete the TGI at a specified website. A link to the website hosting the survey was included for easy participant access and a consent form required by the Human Subjects Committee at Florida State University was also included on the website.

Web-based Survey Research

The web-based research method is a relatively new way to conduct research and has numerous advantages, as well as disadvantages. In several studies conducted comparing response rates of two methods of sending surveys, email and mail, the response rates for email were lower than they were for regular mail (Crawford, Couper, & Lamias, 2001; Tse, 1998). This is partially due to the fact that many people do not have access to email and, if they do, may not use it on a regular basis. A significant challenge researchers encounter is whether or not the population at hand has easy and universal access to email accounts and web-based programs (Stanton, 1998; Tse). Additionally, the comfort level of users with email and the Internet must be considered. Generally, those with a higher level of education tend to have lower computer anxiety (Stanton).

Considering the participants in this study were faculty at community colleges, it was assumed that most had a bachelor's degree and many had master's and doctoral degrees. Additionally, each community college included in the survey has provided email accounts and access to the web for faculty members. Given that these colleges have provided the email addresses of their faculty members on their websites for visitors to access, it was likely that these faculty used this method as a means of communication. A survey conducted by the National Education Association (2000) found that, "E-mail is the dominate means of communication employed by faculty and students outside of the normal instruction time – both in Web-based courses and in not-Web-based courses. Indeed, there is a tremendous amount of faculty-student contact via e-mail" (p. 23). Additionally, a study conducted by Tse (1998) found that email returns were faster than mail returns.

Aside from the ability to access a significantly large population at relatively little cost, Internet surveys can also allow for a decrease in error in entering data, as the respondents enter information directly into the database (Jacobsen, 1998). The use of Internet surveys allows for the ability to control for the quality of the returned surveys, in terms of missing values, unanswered questions, and unclear handwriting. This method allows the researcher to program a survey to not allow for submission unless all necessary questions have been completed.

In a study conducted by Stanton (1998) regarding the assessment of various data collection methods, the surveys distributed via the Internet had fewer missing values than the paper surveys sent through traditional postal mail. Schmidt (1997) stated that once the web survey has been designed, it is necessary to design a CGI program that will transfer the data to an available database. It is through this CGI programming that the researcher is able to control for missing values by displaying a reminder to the participants that they missed a question and will need to complete it in order to submit the survey.

Schmidt (1997) suggested that researchers may be able to increase the motivation of the survey participant by using the web interface to provide instant feedback to the particular responses provided. He stated that by making the survey interactive and providing information back to the user regarding the information they provide about themselves, participants are more likely to provide thoughtful and precise answers. This technique was applied to the current study, as faculty were asked to provide information regarding their personal teaching goals for a class and were able to score the inventory, receiving immediate results regarding their teaching goals, which was more likely to motivate them to complete the survey.

A disadvantage of email surveys is that the anonymity of the respondent is often lost (Crawford, Couper, & Lamias, 2001; Stanton, 1998). Generally, a password is required in order to gain access to the survey. Many respondents can become suspicious, thinking their answers may be tracked. However, this is mainly a concern when dealing with data of a controversial nature. The data in this survey related to faculty teaching goals, and there were clearly no "correct" answers to the survey, particularly as it was a self-assessment of teaching goals. Additionally, Crawford, Couper, and Lamias recommended a password be used in order to control for duplicate responses and for security purposes, i.e., making sure those who have not been asked to participate do not complete the survey.

Crawford, Couper, and Lamias (2001) recommended sending a reminder to recipients of email surveys, as studies have found that surveys received via this medium tend to be responded to almost immediately, and then rapidly decline after the first few days. In a study they conducted involving web surveys, where one group was sent a reminder regarding completion after two days of the initial distribution, and the second group was sent a reminder after five days, they found only a marginal difference in the number of responses regarding how many days after initial distribution the reminders were sent. Response did, however, increase immediately from both groups after reminders were received.

The participants in this study were asked to complete the TGI for a particular class that they are currently teaching or have taught within the past two semesters. A sample of the email letter can be found in Appendix B. Faculty members were assigned a code to access the website in order to ensure no duplicate responses were received. Participants were assured that this code would not be used in any way to identify them. Any data collected by the researcher relating the access code to the participant would not be released and would be destroyed upon completion of the study. Once the survey was completed, the responses were automatically entered into a database to be analyzed. All faculty members received a follow-up reminder requesting them to complete the survey approximately three days after the initial request was made.

There are some faculty who have an institutional email account with their academic institution, but may never actually use it and therefore did not participate in the survey. This was seen as a limitation to the study. However, similar conditions exist when utilizing paper-based surveys in that there are faculty who choose not to open this type of mail or complete surveys. Crawford, Couper, and Lamias (2001) found that the deciding factor in whether a participant will respond to a survey is the letter of introduction requesting participation, regardless of email or postal mail delivery. Though other factors may apply in terms of the format of the survey, the content of the study and survey is the key element in whether someone will participate or not.

Method of Analysis

A combination of statistical methods was used in this study, as described later in this chapter. Hypotheses testing was conducted as follows:

Research Hypothesis #1: Faculty who complete the TGI for a web-based course will have a greater preference for the goal cluster higher order thinking skills than faculty who have taught only traditional courses and complete the TGI for a traditional course.

Research has shown that faculty roles tend to shift in the online environment, with more focus on guiding students through problem-based learning and developing higher order thinking skills and less focus on presenting content (Dringus, 1999; Gillespie, 1998). Additionally, since competency-based assessments are not always an option in this environment, many faculty have turned to using forms of assessment that measure a synthesis of student learning, which is one of the specific goals in this cluster (Fetherston, 2001). Based on these findings, faculty who teach online will more than likely have a preference toward this goal cluster.

Research Hypothesis #2: Faculty who complete the TGI for a web-based course will have a lesser preference for the goal cluster basic academic success skills than faculty who have taught only traditional courses and complete the TGI for a traditional course.

Specific goals in this cluster include "improve skill at paying attention," "improve listening skills," and "improve speaking skills." These are goals that do not relate very well to the online, web-based environment. Faculty have limited, if any, verbal and face-to-face communication with their students when teaching a web-based course, as most of the communication is written, either through emails or in online discussions and chat rooms. Faculty teaching online are not likely to concentrate on areas such as improving listening or speaking skills and are therefore less likely to have a preference for the goals in this cluster.

Research Hypothesis #3: There will be no difference in preferences between faculty who complete the TGI for a web-based course and faculty who have taught only traditional courses and complete the TGI for a traditional course for the goal cluster discipline-specific knowledge and skills.

Though research has shown that academic discipline has been a highly influencing factor on the teaching goals of faculty in general, there is little evidence to show a link between discipline and method of teaching as related to the specific goals in this cluster. The goals in this cluster include "learning concepts and theories in this subject," "learning to understand the perspectives and values of this subject," and "developing skill in using the materials and tools central to this subject." These are goals that are relevant to the discipline, regardless of method of teaching. Once academic discipline is controlled for, there is no reason to believe that faculty who complete the TGI for a web-based course will have a greater or lesser preference for the goals in this cluster.

Research Hypothesis #4: There will be no difference in preferences between faculty who complete the TGI for a web-based course and faculty who have taught only traditional courses and complete the TGI for a traditional course for the goal cluster liberal arts and academic values.

Specific goals included in this cluster are "develop an openness to new ideas," "develop a lifelong love of learning," and "develop capacity of make informed ethical choices." These goals center around learning basic values inherent in teaching liberal arts, whether it be taught in a traditional, face-to-face classroom or in a distance learning environment. Though the teaching methods, content, and communication of instructors using online techniques may need to be adapted, there is no research to conclude that the academic values that are translated into this environment should need to be adjusted, as well. Therefore, no difference in preference should exist between these groups of faculty regarding this goal cluster.

Research Hypothesis #5: There will be no difference in preferences between faculty who complete the TGI for a web-based course and faculty who have taught only traditional courses and complete the TGI for a traditional course for the goal cluster work and career preparation.

Though the goals in this cluster might at first seem to be preferred by online instructors, i.e. "improve management skills," "improve the ability to organize and use time effectively," "develop ability to work productively with others," there is no reason to believe these goals would not also be preferred by teachers in the traditional classroom environment. These basic work and career preparation skills would seem to be evenly preferred by all instructors, particularly at the community college level, as many of the students are older, working and have families to support (Barnard, 1997). If this study was comparing faculty at community colleges and four-year institutions, the resulting hypothesis may be different. However, as all faculty in this study are at the same type of institution, there should be no preference toward this goal cluster despite the particular method of instruction.

Research Hypothesis #6: There will be no difference in preferences between faculty who complete the TGI for a web-based course and faculty who have taught only traditional courses and complete the TGI for a traditional course for the goal cluster personal development.

Some of the specific goals in this cluster would seem to be preferred by faculty who complete the TGI for an online course, such as "develop a capacity to think for oneself" and "develop respect for others," as faculty tend to stress more synthesizing the material rather than memorizing it in the online environment (Collins, 1991; Dringus, 1999; Gillespie, 1998). Additionally, faculty have addressed the issue of engaging students through the use of such interactive methods as online discussions and group projects (Whitesel, 1998). The majority of the discussion is in written form in a web-based course and faculty and students must therefore be careful with their dialogue, since there is a lack of verbal tone and body language. The written word can be interpreted in ways that are different than what was intended, and can sometimes offend. Proper communication skills in the online environment is key to a successful learning experience.

However, there are also goals in this cluster that may be preferred by faculty who complete the TGI for a traditional course, such as "cultivate a sense of responsibility for one's own behavior" and "cultivate physical health and well-being." These are goals that faculty are able to relate to in person, as they can visually see a student's physical state and observe their behavior in the classroom, thereby being able to effect a change if they believe necessary. These are goals that do not come as easily for the online instructor. Considering the potential for mixed preferences for the goals in this cluster, the preferences may more than likely balance each other out and therefore result in no particular preference for either group regarding this goal cluster of personal development.

The guiding research question for this study referred to whether the goals of faculty who teach online, web-based courses were different from those of faculty who teach a traditional, face-to-face course. The six dependent variables in this question were the six goal clusters of the Teaching Goals Inventory: (a) higher order thinking skills, (b) basic academic success skills, (c) discipline-specific knowledge and skills, (d) liberal arts and academic values, (e) work and career preparation, and (f) personal development.

Since there were multiple criterion, or dependent variables, involved in this particular question, a multivariate analysis of variance (MANOVA) was performed. A MANOVA is similar to an analysis of variance (ANOVA), which is utilized when there is one dependent variable and the means of more than two groups are to be analyzed for significant differences (Fraenkel & Wallen, 1993). However, a MANOVA allows for the inclusion of more than one dependent variable, which is the current case.

It was possible to conduct several one-way ANOVAs when presented with multiple dependent variables. However, this should be performed only when there is believed to be no correlation among the various dependent variables or the results of this correlation are not of interest. Additionally, an advantage of using MANOVA over ANOVA when there is more than one dependent variable is that the relationship among the variables can be examined, as well, rather then analyzing each separately. In this sense, a more powerful analysis results than would if several individual ANOVAs were performed (Bray & Maxwell, 1985).

Past research, however, has found that the number of years of teaching experience and teaching status may affect teaching goals (Fox, 1997; Schwarze, 1996; Swenson, 1997). In order to control for these variables, a multivariate analysis of covariance (MANCOVA) was conducted for this question. A MANCOVA is very similar to a MANOVA except it allows the researcher to eliminate initial differences among the groups based on the covariate (Best & Khan, 1998). Conducting a MANOVA/ MANCOVA generally involves a two-step process. The first part is the overall or omnibus test, in which the hypothesis that there are no significant differences in the means for the groups is tested. This test is similar to the overall F-test used in ANCOVA. If this test proves to be significant, the researcher proceeds to the next step, which is to perform univariate and post-hoc tests to explain the differences between the groups and provide a more in-depth understanding of the data.

Specific omnibus tests include Wilks' Lambda, Pillais' Trace Criterion, Hotelling's Trace Criterion, and Roy's Largest Root. Though there is no general consensus regarding which follow-up tests to perform to further evaluate the null hypothesis, there are a variety that are acceptable. Examples of such tests include the Least Significant Difference test or the protected F procedure, and the Dunn-Sidak comparison (Bray & Maxwell, 1985). Specifically, the Bonferroni pairwise comparison was used in this study in conducting a MANCOVA for analysis of the guiding research question.

For the additional findings given in this data set, descriptive statistics, such as frequency distributions, were utilized. These provided the basis for defining the teaching goals of web-based instructors, the first of the additional research questions. The effect of the two variables, teaching status and the number of years of teaching experience, on the instructional goals of faculty who teach online, web-based courses was determined through the MANCOVA procedure explained previously.

Finally, in reference to the third collateral research question, how the goals of faculty who teach online, web-based courses compared to the goals of faculty in a nationwide sample surveyed by Angelo and Cross' (1993) original study, descriptive statistics were utilized. The data available from Angelo and Cross' study was limited to overall means and standard deviations for each of the goals and goal clusters. Therefore, overall means and standard deviations for the current study were identified in conducting the analysis for this question. Angelo and Cross separated their data in terms of two-year and four-year institutions, thereby allowing comparisons to be made with only the two-year colleges surveyed.

CHAPTER IV

RESULTS

This study was designed to identify the instructional goals of faculty who teach web-based courses in two-year community colleges and compare these to the teaching goals of faculty who teach traditional courses. The following research questions directed this study and the analysis techniques used to address these questions are described in this chapter.

The guiding research question for this study is:

1. Are the instructional goals of community college faculty who teach online, web-based courses different from those of community college faculty who teach a traditional, face-to-face course?
2. Along what dimensions are the instructional goals of community college faculty who teach online, web-based courses different from those of community college faculty who teach a traditional, face-to-face course?

In the process of gathering data to respond to this question, the following additional or collateral questions were also researched:

a. What are the teaching/instructional goals of community college faculty who teach online, web-based courses?

b. Are the goals of community college faculty who teach online, web-based courses affected by teaching status (full-time or part-time) and number of years of teaching experience?

c. How do the goals of community college faculty who teach online, web-based courses compare to the goals of faculty in a nationwide sample surveyed by Angelo and Cross's original study conducted in 1993?

Demographic Data for the Sample

A comprehensive list of all full-time and part-time faculty members with email addresses was collected from all 28 community colleges in Florida. In total, 8,034 participants were contacted via email to participate in the study. There were 1,765 email addresses returned as invalid, resulting in a total population of 6,269. Though 613 responses were originally received, many needed to be eliminated for incomplete responses. There were 529 usable responses for the study, for a final response rate of 8.4 percent. From this sample, faculty were divided into the following four groups, depending on their teaching experience:

1. Faculty who have taught only traditional, face-to-face courses who completed the TGI for a traditional course (n=371);
2. Faculty who have taught both traditional, face-to-face courses and online, web-based courses who completed the TGI for a traditional course (n=62);
3. Faculty who have taught both traditional, face-to-face courses and online, web-based courses who completed the TGI for a web-based course (n=92); and

4. Faculty who have taught only online, web-based courses who completed the TGI for a web-based course (n=4).

The fourth group resulted in only four participants and therefore, as noted in the methodology, was not included in the analysis. The remaining groups of faculty were matched on the variable discipline, based on the course information provided in the survey. Academic discipline categories were adapted from a study conducted by the National Center for Education Statistics (1993a) on faculty at two-year public institutions. Disciplines were grouped as follows: (a) Business, Law, and Communication; (b) Health and Natural Sciences; (c) Humanities and Fine Arts; (d) Social Sciences and Education; and (e) Vocational Training.

Since the second group had 62 responses, this number was used as the base number for all groups in keeping with the minimum sample size of 60 derived from the sampling formula. Equal group sizes were used to assist in meeting assumptions for the MANCOVA analysis. Responses within the three remaining groups were randomly chosen and then matched on the discipline categories previously listed, until an equal and proportionate sample was achieved for each group. This resulted in a sample total of 186 participants.

Demographic data for the sample are presented in Table 4.1. There were significantly more full-time faculty who participated in the study than part-time, with just over 80 percent having full-time status. There were also slightly more female (55 percent) faculty participants than male. Years of teaching experience varied, with the smallest percentage of faculty teaching less than 1 year (6.5 percent) and the greatest percentage teaching 11 to 15 years (26.9 percent).

Table 4.1 Demographic characteristics of the sample.

Variable	All Groups (n=186)	Group 1* (n=62)	Group 2* (n=62)	Group 3* (n=62)
Teaching Status				
Full-time	80.6	67.7	87.1	87.1
Part-time	19.4	32.3	12.9	12.9
Gender				
Female	54.8	46.8	62.9	54.8
Male	45.2	53.2	37.1	45.2
Teaching Experience				
Less than 1 year	6.5	8.1	3.2	8.1
1 to 5 years	18.8	16.1	21.0	19.4
6 to 10 years	16.1	14.5	17.7	16.1
11 to 15 years	26.9	25.8	27.4	27.4
16 to 20 years	11.3	12.9	8.1	12.9
More than 20 years	20.4	22.6	22.6	16.1

*Group 1 refers to faculty who have taught only traditional, face-to-face courses who completed the TGI for a traditional course.
Group 2 refers to faculty who have taught both traditional, face-to-face courses and online, web-based courses who completed the TGI for a traditional course.
Group 3 refers to faculty who have taught both traditional, face-to-face courses and online, web-based courses who completed the TGI for a web-based course.

Reliability

Reliability analysis for the TGI was originally performed by Angleo and Cross (1993) with the development and administration of the instrument. These reliability levels were discussed in the previous chapter. Additional reliability testing was conducted for this administration of the TGI, and the results displayed in Table 4.2. Since this instrument was set on a Likert rating scale, the coefficient alpha measure, specifically Chronbach's alpha, was used (Ary, Jacobs, & Razavieh, 1996). As seen from the data, the reliability coefficients were similar to those found by Angelo and Cross, and were well above the acceptable levels of 0.50 or 0.60, which are generally needed for purposes of making decisions about groups of participants (Fink & Kosecoff, 1998). Additionally, almost all of the coefficients met the criteria set forth for most social research, as well, where reliabilities of 0.80 are considered acceptable, particularly if the items in the survey are well-constructed (Mueller, 1986).

Table 4.2 Coefficient alpha reliabilities for TGI administration.

Cluster Number	Cluster Name	Alpha Coefficient
I	Higher-Order Thinking Skills	(.86)
II	Basic Academic Success Skills	(.87)
III	Discipline-Specific Knowledge and Skills	(.73)
IV	Liberal Arts and Academic Values	(.88)
V	Work and Career Preparation	(.88)
VI	Personal Development	(.92)

MANCOVA Analysis

Due to the multiple dependent variables and covariates involved in the research questions, a multivariate analysis of covariance (MANCOVA) technique was primarily used to analyze the collected data. Before this technique could be utilized, there were a number of assumptions that had to be met with regard to the data. The following sections describe the criteria for these assumptions, as well as the technical analysis and interpretation of the results.

MANOVA/MANCOVA Assumptions

There are a number of assumptions that must be met before a MANOVA/ MANCOVA can be properly performed. These include randomly sampled participants, independent observations, normal distribution of dependent variables, and common covariances within each group. Though it is important to meet these assumptions, some of these are robust to minimal violations, so it is not crucial that they be met precisely (Bray & Maxwell, 1985; Stevens, 2002). The large sample size in this study and the equal group sizes contributed to the overall robustness of these assumptions.

The first assumption, units must be randomly sampled, was met as described in Chapter Three. Additionally, all observations were independent of each other, as no one observation was dependent on a previous one and there were no interactions among participants that may have influenced their responses (StatSoft, 2002; Stevens, 2002). These assumptions are not very robust in the face of violations and were therefore strictly adhered to.

Scatterplots and standardized residuals were then examined to assess the degree of normality of the variables. A slight positive skew was noted in one of the dependent variables, higher order thinking skills, indicating the distribution was not symmetrical. For a normal distribution, the skewness and kurtosis should not be more than 2.5 times the standard error (Morgan & Griego, 1998). The kurtosis of this variable was also more than twice its standard error. However, the normality assumption is robust to violations, and departures from normality tend to have minimal effects on Type I error rates (Bray & Maxwell, 1985; Stevens, 2002). In particular, if the violation was not caused by outliers but by skewness of the data, as was the case in this instance, then the violation is not as critical (Poulsen & French, 2002). Additionally, considering the large sample size and the equal sample sizes of the groups, this assumption was considered to be robust to this slight violation of normality with regard to higher order thinking skills.

Table 4.3 displays the means and standard deviations for the six dependent variables in this study. Group one consisted of faculty who have taught only traditional, face-to-face courses and completed the TGI for a traditional course; group two contained faculty who have taught both traditional, face-to-face courses and online, web-based courses and completed the TGI for a traditional course; and group three were faculty who have taught both traditional, face-to-face courses and online, web-based courses and completed the TGI for a web-based course. Though the deviations among the groups were not identical, the variances in the deviations were very small. The assumption of homogeneity of variance specifies that the variability among the groups must be equal. However, since this assumption is considered very robust against violations, and the variances were roughly equal in this case, the homoscedasticity of the data was considered to have been met (Lindman, 1974; Stevens, 2002).

Table 4.3 Means and standard deviations of dependent variables.

	Group 1* (n=62)		Group 2* (n=62)		Group 3* (n=62)	
Dependent Variable (n=186)	**M**	**SD**	**M**	**SD**	**M**	**SD**
Higher Order Thinking Skills	3.64	0.89	4.14	0.75	4.05	0.60
Basic Academic Success Skills	2.96	0.94	3.66	0.68	3.17	0.98
Discipline-Specific Knowledge and Skills	3.33	0.71	3.65	0.74	3.70	0.56
Liberal Arts and Academic Values	2.69	0.92	3.20	0.95	2.88	0.83
Work and Career Preparation	3.25	0.83	3.65	0.96	3.51	0.87
Personal Development	3.05	0.92	3.62	1.12	3.19	1.02

*Group 1 refers to faculty who have taught only traditional, face-to-face courses who completed the TGI for a traditional course.
Group 2 refers to faculty who have taught both traditional, face-to-face courses and online, web-based courses who completed the TGI for a traditional course.
Group 3 refers to faculty who have taught both traditional, face-to-face courses and online, web-based courses who completed the TGI for a web-based course.

Since there were multiple dependent variables, not only must the assumption of homogeneity of variances be met, but the correlations among the dependent variables should be homogenous, as well. Table 4.4 provides a matrix using the Pearson Product Moment Correlation r to determine the direction of the correlations and whether high correlations existed. There were mainly positive correlations among the dependent variables, with most being significant at the $p<.05$ level. Considering the nature of the inventory and the fact that all variables were related in some way to teaching goals, it is not surprising that the correlations were significant. However, these correlations were below the level of shared variance that would constitute a major violation of this assumption. Most of the test statistics for MANOVA tend to be robust, even with slight violations of this assumption, when sample sizes are large and equal (Bray & Maxwell, 1985). The sample sizes in this group met these standards and contributed to the robustness of this assumption, mitigating any concern over a significant violation.

Table 4.4 Pearson product moment correlations r among dependent variables.

Variable (n=186)	**HOTS**	**BASS**	**DSKS**	**LAAV**	**WCP**	**PD**
1. Higher Order Thinking Skills (HOTS)	1.00	.462*	.523*	.472*	.533*	.535*
2. Basic Academic Success Skills (BASS)		1.00	.491*	.501*	.655*	.558*
3. Discipline-Specific Knowledge and Skills (DSKS)			1.00	.552*	.577*	.504*
4. Liberal Arts and Academic Values (LAAV)				1.00	.458*	.698*
5. Work and Career Preparation (WCP)					1.00	.744*
6. Personal Development (PD)						1.00

*$p<.05$

Multivariate Test

The first step in the MANCOVA procedure is the overall, or omnibus, F test. This procedure tests the null hypothesis for any significant differences among the groups and is based not only on the sum of squares among groups, but also considers covariance in addition to group means (Garson, 2002). The null hypothesis for this study stated that there were no significant mean differences among the three groups of faculty with regard to all outcome variables, specifically teaching goals.

Several tests exist for this purpose, including Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root. The Pillai's Trace test involves the sums of explained variances in discriminant analysis. It is often preferred above the other tests as it the most robust of all of the tests, particularly when there has been a violation involving homogeneity of variances, and therefore minimizes the risk of Type I error (Bray & Maxwell, 1985; Garson, 2002). Wilks' Lambda, one of the most common tests used when there are multiple groups, is a "measure of the differences between groups of the centroid (vector) of means on the independent variables" (Garson, 2002, p. 2). As the value of the lambda decreases, the differences among the groups increase. Hotelling's trace is generally used when comparisons are being made between two groups defined by the independent variables (Garson, 2002; Stevens, 2002). Roy's Largest Root, also referred to as Roy's Characteristic Root, is similar to Pillai's Trace, however it is less robust, particularly in terms of violations to the normality assumption, and can therefore lead to multiple Type I errors (Bray & Maxwell, 1985; Garson, 2002).

Table 4.5 displays the four different omnibus tests that were performed, along with their corresponding results. All tests were significant at the p<.05 level. Therefore, testing continued into the univariate level in order to explain the differences among the various groups involved.

Table 4.5 Multivariate analysis tests.

Test	Value	F	Sig.
Pillai's Trace	.181	2.939	.001
Wilks Lambda	.825	2.962	.001
Hotelling's Trace	.205	2.985	.001
Roy's Largest Root	.157	4.632	.000

p<.05

Univariate Tests and Hypothesis Testing

Since the omnibus test was significant, testing continued at the univariate level. Univariate level testing initially indicated that five of the six variables were significant at the p<.05 level. However, since there were multiple dependent comparisons being made, the Bonferroni adjustment was applied. This adjustment is used when there are multiple tests being conducted to reduce the possibility of erroneous significant differences (Morgan & Griego, 1998). Using the Bonferroni method, the alpha level (.05), was divided by the total number of comparisons (6). With this adjustment, which resulted in p<.008, four of the six variables were significant, as seen in Table 4.6: higher order thinking skills, basic academic success skills, liberal arts and academic values, and personal development.

The remaining two variables, discipline-specific knowledge and skills and work and career preparation, were not significant (see Table 4.6). The eta squared represents the amount of variance explained by the differences among the groups (Glass & Hopkins, 1996). Post-hoc comparisons using the Bonferroni test were then conducted on the significant variables in order to detect the specific differences between the groups and complete hypothesis testing.

Table 4.6 Univariate analysis tests.

Variable	**F**	**Sig.**	**Eta Squared**
Higher Order Thinking Skills	5.246	.006*	.055
Basic Academic Success Skills	10.218	.000*	.101
Discipline-Specific Knowledge and Skills	3.479	.033	.037
Liberal Arts and Academic Values	5.339	.006*	.056
Work and Career Preparation	2.854	.060	.031
Personal Development	5.612	.004*	.058

*p<.008

Observed and Adjusted Means

Since this analysis entailed covariates and thus resulted in the performance of a MANCOVA, rather than a simple MANOVA, it was necessary to use the adjusted means rather than the observed means provided in the descriptive statistics. The covariates included in this analysis were years of teaching experience and teaching status, i.e., full-time or part-time status. Once the multivariate and univariate tests were completed, adjusted means were calculated and used in the final analysis of the hypotheses. This allowed for more accurate assessment of the data. A summary of adjusted means for each group can be found in Table 4.7.

Table 4.7 Summary of adjusted means.

Dependent Variable	Group	Adjusted[a] M	Std. Error
Higher Order Thinking Skills	Taught Traditional Only	3.69	.098
	Taught Both, Traditional Course	4.12	.096
	Taught Both, Web-based Course	4.04	.097
Basic Academic Success Skills	Taught Traditional Only	2.95	.115
	Taught Both, Traditional Course	3.67	.112
	Taught Both, Web-based Course	3.19	.113
Discipline-Specific Knowledge and Skills	Taught Traditional Only	3.37	.089
	Taught Both, Traditional Course	3.64	.087
	Taught Both, Web-based Course	3.68	.088
Liberal Arts and Academic Values	Taught Traditional Only	2.68	.118
	Taught Both, Traditional Course	3.22	.116
	Taught Both, Web-based Course	2.90	.117
Work and Career Preparation	Taught Traditional Only	3.26	.116
	Taught Both, Traditional Course	3.64	.114
	Taught Both, Web-based Course	3.51	.114
Personal Development	Taught Traditional Only	3.02	.134
	Taught Both, Traditional Course	3.64	.132
	Taught Both, Web-based Course	3.21	.132

[a]Covariates: Years of Experience, Teaching Status

Research Hypotheses

Research Hypothesis #1

The first research hypothesis stated: Faculty who complete the TGI for a web-based course will have a greater preference for the goal cluster higher order thinking skills than faculty who have taught only traditional courses and complete the TGI for a traditional course.

This hypothesis was significant at the univariate level, meaning the null hypothesis was rejected and differences among the three groups of faculty were found. Post-hoc tests revealed a significant difference between faculty in the first group who have taught only traditional, face-to-face courses and faculty members in the second and third groups who have taught both methods and completed the TGI for either a traditional or web-based course (see Table 4.8). Examination of the adjusted means indicated higher mean scores for faculty who completed the inventory for a web-based course than faculty who have only taught traditional courses and, therefore, confirmed this hypothesis. Additionally, significant differences were found between faculty who taught only traditional courses and faculty who taught both methods and completed the TGI for a traditional course. Faculty who taught both methods had higher adjusted means for the goal of higher order thinking skills.

Table 4.8 Higher order thinking skills.

(A)	(B)	Differences In Means (A-B)	Std. Error	Sig.
Taught Traditional Only	Taught Both, Traditional Course	-.429*	.139	.002
Taught Traditional Only	Taught Both, Web-based Course	-.344*	.140	.015
Taught Both, Traditional Course	Taught Both, Web-based Course	.085	.136	.531

*p<.01

Research Hypothesis #2

The second research hypothesis stated: Faculty who complete the TGI for a web-based course will have a lesser preference for the goal cluster basic academic success skills than faculty who have taught only traditional courses and complete the TGI for a traditional course.

As seen previously, univariate testing confirmed that there were differences among the groups regarding this variable and therefore the null hypothesis was rejected. Further post-hoc testing indicated significant differences between faculty who taught traditional courses and faculty who taught both methods but completed the inventory for a traditional course, as well as significant differences between faculty who taught both methods and completed the TGI for a traditional course and those who taught web-based courses. Statistically significant differences were not found between the two groups stated in the hypothesis, as seen in Table 4.9, thereby causing a rejection of this hypothesis.

Table 4.9 Basic academic success skills.

(A)	(B)	Differences In Means (A-B)	Std. Error	Sig.
Taught Traditional Only	Taught Both, Traditional Course	-.714*	.162	.000
Taught Traditional Only	Taught Both, Web-based Course	-.235	.163	.150
Taught Both, Traditional Course	Taught Both, Web-based Course	.478*	.158	.003

*p<.01

Research Hypothesis #3

The third research hypothesis stated: There will be no difference in preferences between faculty who complete the TGI for a web-based course and faculty who have taught only traditional courses and complete the TGI for a traditional course for the goal cluster discipline-specific knowledge and skills.

Univariate tests found no significant differences with regard to discipline-specific knowledge and skills, therefore further post-hoc tests did not need to be performed to find differences among the groups (see Table 4.6). Examination of the adjusted means showed a slight difference in the mean values among the three groups, however, as confirmed by the univariate testing, differences were not large enough to indicate any significant difference. Therefore, this hypothesis was accepted.

Research Hypothesis #4

The fourth research hypothesis stated: There will be no difference in preferences between faculty who complete the TGI for a web-based course and faculty who have taught only traditional courses and complete the TGI for a traditional course for the goal cluster liberal arts and academic values.

Univariate testing indicated significant findings regarding this variable. Therefore, post-hoc tests were conducted to explore the differences among the groups. These tests indicated significant findings for faculty who taught only traditional courses and faculty who taught both methods and completed the TGI for a traditional course (see Table 4.10). However, no significant differences were found between the two groups stated in the hypothesis. Therefore, this research hypothesis was confirmed.

Table 4.10 Liberal arts and academic values.

(A)	(B)	Differences In Means (A-B)	Std. Error	Sig.
Taught Traditional Only	Taught Both, Traditional Course	-.542*	.168	.001
Taught Traditional Only	Taught Both, Web-based Course	-.217	.169	.199
Taught Both, Traditional Course	Taught Both, Web-based Course	.325*	.164	.050

*p<.01

Research Hypothesis #5

The fifth research hypothesis stated: There will be no difference in preferences between faculty who complete the TGI for a web-based course and faculty who have taught only traditional courses and complete the TGI for a traditional course for the goal cluster work and career preparation.

No significant differences were found in the univariate testing stage for this variable, therefore it was not necessary to conduct post-hoc tests (see Table 4.6). As a follow-up, however, adjusted means between the groups were studied and confirmed the univariate tests that no significant differences existed between the variables. Therefore, this research hypothesis was confirmed.

Research Hypothesis #6

The sixth research hypothesis stated: There will be no difference in preferences between faculty who complete the TGI for a web-based course and faculty who have taught only traditional courses and complete the TGI for a traditional course for the goal cluster personal development.

Significant differences were found in univariate testing for this variable, resulting in further post-hoc testing. These tests indicated that, though significant differences existed among the groups, they did not exist between faculty who have taught only traditional courses and completed the TGI for a traditional course and faculty who have taught both methods and completed the TGI for a web-based course (see Table 4.11). Differences found among the other groups are discussed in the additional findings.

However, the lack of significance between the two groups referenced in the hypothesis resulted in an acceptance of the stated hypothesis.

Table 4.11 Personal development.

(A)	(B)	Differences In Means (A-B)	Std. Error	Sig.
Taught Traditional Only	Taught Both, Traditional Course	-.615*	.190	.001
Taught Traditional Only	Taught Both, Web-based Course	-.187	.191	.328
Taught Both, Traditional Course	Taught Both, Web-based Course	.428*	.185	.022

*p<.01

Additional Findings

The first additional research question asked about the goals of web-based faculty. Means and standard deviations for the goal clusters can be found in Table 4.3. In examining the data, web-based faculty had a clear preference for higher-order thinking skills, ranking this as the highest rated goal cluster. The other goal clusters were ranked as follows, beginning with the most essential: discipline-specific knowledge and skills, work and career preparation, personal development, basic academic success skills, and liberal arts and academic values. Standard deviations were similar for most of the goal clusters, ranging mainly from 0.50 to 1.00. One exception was the goal cluster personal development. The standard deviation for this goal was 1.02, indicating that the scores were slightly broader than those for the other goal clusters.

Research was also conducted to address the second collateral question regarding the effect of the covariates on the dependent variables. The covariates included in this study were years of teaching experience and teaching status, i.e., full-time or part-time status. Table 4.12 displays the results of the tests of between-subjects effects. Neither of the covariates had a significant effect on the dependent variables, resulting in a rejection of the second collateral research question, are the goals of community college faculty who teach online, web-based courses affected by teaching status (full-time or part-time) and/or number of years of teaching experience.

Table 4.12 Between-subjects effects for covariates.

	Years of Experience		Teaching Status	
Dependent Variable	**F**	**Sig.**	**F**	**Sig.**
Higher Order Thinking Skills	.044	.834	3.11	.079
Basic Academic Success Skills	2.49	.116	.263	.609
Discipline-Specific Knowledge and Skills	1.02	.315	1.87	.173
Liberal Arts and Academic Values	.057	.811	2.04	.155
Work and Career Preparation	.689	.408	.076	.783
Personal Development	.071	.790	1.58	.210

$p<.05$

Finally, Angelo and Cross' (1993) nationwide study was used for comparisons between faculty members. Due to the nature of the results provided by the researchers, only overall means and standard deviations for each of the goals and goal clusters were available for comparative analysis. The community college data provided by Angelo and Cross was utilized in this analysis. A total of 1,873 community college faculty members participated in their study. Additionally, since Angelo and Cross did not attempt to control for external factors through the use of covariates in their sample, the unadjusted data for the current study was used for these comparisons. Table 4.13 displays the means and standard deviations for both studies for each of the goal clusters, or dependent variables. The first column contains the results of Angelo and Cross' study, the second refers to the results of the current study for faculty who completed the TGI for a web-based course, and the third column includes all faculty, regardless of teaching method, from the current study.

Due to the fact that Angelo and Cross (1993) did not provide the TGI scores for each participant, but rather presented the data in aggregate as overall means and standard deviations for the community college instructors, specific tests for significance, such as chi-square analysis and t-test for independent means, were not possible. Therefore, analysis was based on comparisons of means and standard deviations for the studies, as similar studies have concluded (Schwarze, 1996; Swenson, 1997).

Examination of the data shows that web-based faculty had much higher mean scores for all of the goal clusters and, in most cases, rated the goals almost one measure higher. Additionally, standard deviations for the two groups were very different, with the web-based faculty having lower standard deviations for all of the goal clusters. This indicates that the participant ratings in Angelo and Cross' (1993) study were broader and more encompassing than those of the current study, where scores tended to gravitate more toward the mean. Similar results, both in terms of mean scores and standard deviations, were found for all of the participants in the study as compared to the national study, as can be seen from Table 4.13.

Table 4.13 Comparison of data with Angelo and Cross' nationwide sample.

	Angelo and Cross Study		**Current Study-Web-based**		**Current Study – All Groups**	
Dependent Variable	**M**	**SD**	**M**	**SD**	**M**	**SD**
Higher Order Thinking Skills	3.09	0.86	4.05	0.60	3.95	0.78
Basic Academic Success Skills	2.29	1.20	3.17	0.98	3.27	0.92
Discipline-Specific Knowledge and Skills	2.83	1.06	3.70	0.56	3.57	0.70
Liberal Arts and Academic Values	2.02	1.29	2.88	0.83	2.93	0.93
Work and Career Preparation	2.50	1.00	3.51	0.87	3.47	0.90
Personal Development	2.41	1.19	3.19	1.02	3.29	1.05

Summary

The overall research question contained six research hypotheses with regard to teaching goals of community college faculty. Hypotheses one, two, four, and six were found to be statistically and practically significant. Further post-hoc tests confirmed and rejected the results of the directional hypotheses. Hypotheses three and five were not found to be significant, and no further testing was conducted for these. Additionally, the effect of the covariates on the dependent variables was examined, resulting in no statistical significance of these factors. The data by Angelo and Cross (1993) from their nationwide study was provided and used for comparison analysis with the data from this study. These results are discussed in depth in the next chapter.

CHAPTER V

DISCUSSION

The purpose of this study was to conduct an in-depth examination of the instructional goals of faculty who teach in the online environment and compare those to the goals of faculty who teach traditional, face-to-face courses in order to assist in improving teacher effectiveness and enhance student learning. This chapter provides a brief review of the research, as well as discusses the findings of the analysis conducted, implications, conclusions, and recommendations for further research.

Examining the differences in teaching goals between these two groups can assist faculty in identifying their instructional goals, as well as improve teaching methods and overall student learning. Additionally, faculty and administrators can use the information garnered from this study to evaluate curricula and instructional programs within their institutions. Numerous studies on assessment models have been conducted by researchers (Chickering and Gamson, 1987; Lowman, 1984; Weimer, 1990) to address the issue of teacher effectiveness. However, the model developed by Angelo and Cross (1993) specifically examined teaching effectiveness within the context of the classroom and provided a means by which to assess effectiveness through the use of the Teaching Goals Inventory (TGI).

The continuously evolving role of the professor was examined, specifically in relation to the online learning environment. Aspects of teaching that have been affected by the web-based setting include course content, teaching strategies and techniques, assessment procedures, and teaching goals. Learning to adjust teaching styles to accommodate these changes has been a challenge for instructors, and creating an environment that encourages students to synthesize knowledge and learn more autonomously are just a few of the effects of using the web-based environment (Chizmar and Williams, 1996; Collins, 1991; McKeachie, 1994; Menges, 1994; O'Banion, 1997; Zukan, 1999).

Though there have been numerous studies utilizing the TGI related to distinct groups of faculty, there has been no research of the effects on teaching goals in the online environment. Previous research has included the examination of teaching goals with full-time versus part-time faculty, practitioner educators, and faculty in research-oriented universities (Fox, 1997; Johnson, 1997; Schwarze, 1996; Swenson, 1997). This study has contributed to the existing body of literature on teaching goals and classroom assessment, as well as to the research on web-based instruction. Following is a discussion of the analyses conducted.

Summary of Findings

Several research questions were developed for this study based on a review of the literature and the significant gaps in the research pertaining to teaching goals and web-based distance learning. These questions were as follows:

1. Are the instructional goals of community college faculty who teach online, web-based courses different from those of community college faculty who teach a traditional, face-to-face course?
2. Along what dimensions are the instructional goals of community college faculty who teach online, web-based courses different from those of community college faculty who teach a traditional, face-to-face course?

Additional research questions included: (a) what are the teaching/instructional goals of community college faculty who teach online, web-based courses?; (b) are the goals of community college faculty who teach online, web-based courses affected by teaching status (full-time or part-time) and number of years of teaching experience?; and (c) how do the goals of community college faculty who teach online, web-based courses compare to the goals of faculty in a nationwide sample surveyed by Angelo and Cross's original study conducted in 1993?

The sample for the study consisted of full-time and part-time faculty from the public community colleges in Florida. Faculty were invited to participate in the study via an email that specified the website address hosting the Teaching Goals Inventory. Three groups of faculty were identified in the final analysis of data and were matched on discipline taught. Final faculty groups included: (a) faculty who have taught only traditional, face-to-face courses who completed the TGI for a traditional course; (b) faculty who have taught both traditional, face-to-face courses and online, web-based courses who completed the TGI for a traditional course; and (c) faculty who have taught both traditional, face-to-face courses and online, web-based courses who completed the TGI for a web-based course.

Since there were six dependent variables in this study resulting from the six goal clusters on the TGI, data was analyzed using a MANCOVA design. Years of teaching experience and teaching status, i.e., part-time and full-time status, were controlled by entering them as covariates in the analysis. The overall omnibus test proved to be significant, which indicated that there were initial differences among the groups. Further univariate testing, with a Bonferroni adjustment, found that four of the six variables were significant. Post-hoc testing and adjusted means provided the researcher with the information to identify preferences among the faculty groups for teaching goals and to complete the hypotheses testing.

Higher Order Thinking Skills

The first research hypothesis stated: Faculty who complete the TGI for a web-based course will have a greater preference for the goal cluster higher order thinking skills than faculty who have taught only traditional courses and complete the TGI for a traditional course. Results indicated a significant finding for the hypothesis regarding the teaching goal higher order thinking skills. It was proposed that faculty who completed the TGI for a web-based course would have a greater preference for this goal cluster than faculty who have never taught a web-based course and completed the inventory for a traditional course. Specifically, web-based faculty had a significantly higher adjusted mean (M=4.04) than traditional faculty (M=3.69).

There are a number of possible reasons for this outcome. When placed in a web-based learning environment, it is necessary for faculty to think about their courses and the delivery of information in a different way than they would in a traditional classroom. Previous research has shown that simply placing lecture notes on the web-based platform and expecting students to learn in this manner is not a constructive method of teaching and learning. Gillespie (1998) stated that, in the online environment, faculty have more time to spend on planning activities that focus on higher order thinking skills, rather than on presenting the content, since they do not have to play the role of the lecturer as they would in a traditional classroom.

Faculty roles in the online environment shift from being a conveyor of knowledge and information to guiding students through the learning process (Willis, 1994; Zukas, 1999). Less focus is on presenting content and more effort is given to problem solving (Dringus, 1999; Gillespie, 1998). Fetherston (2001) discussed the shift in assessment practices as one example of the change that faculty who teach web-based courses must make. Prior methods of testing centering on recalling facts and principles are based on "surface learning". Rather, faculty must take a more holistic approach to assessment in the online environment, and develop methods to measure a synthesis of student knowledge and allow them to express their interpretations of the material.

Many of the goals in this section of the TGI specify the development of analytical and problem-solving skills, drawing inferences from observations, synthesizing and integrating information, and thinking creatively and holistically. Many of these specific goals have been referenced in the literature as concerns faculty must address when shifting from the traditional classroom environment to the online environment. It is a natural progression for faculty to have a higher preference for these goals when teaching web-based courses, as this technology compels them to think in a different way about their teaching methods and goals for their students.

An additional significant finding regarding this goal cluster was between faculty who have only taught traditional courses (M= 3.69) and faculty who have taught both methods and completed the TGI for a traditional course (4.12). Reasons for this result are not much different than those just discussed for web-based faculty. Since faculty who have taught both methods have had to change their teaching methods and goals to adjust to the online environment, it is likely that these faculty keep these perceptions with them when they return to the traditional classroom, thereby affecting their teaching goals in this environment, as well

Basic Academic Success Skills

The second research hypothesis stated: Faculty who complete the TGI for a web-based course will have a lesser preference for the goal cluster basic academic success skills than faculty who have taught only traditional courses and complete the TGI for a traditional course. Results indicated no significant differences between faculty who completed the TGI for a web-based course and faculty who have taught only traditional courses and completed the TGI for a traditional course for the goal cluster basic academic success skills. Therefore, this hypothesis was rejected.

This outcome could be explained by various factors. For instance, though a number of the goals in this cluster refer to the improvement of speaking and listening skills, items that would generally not relate to the online environment, there are a number of other goals that web-based faculty could have ranked more important, such as improving reading and writing skills, and developing appropriate study skills and behaviors. Since much of the interaction involved in web-based learning involves the written word rather than verbal communication, it is important to develop these skills. It is particularly essential for students to learn good writing skills in this environment, as this is their main form of communication, whether it is researching a term paper or composing an email to post to other students in the class for discussion (Lynch, 1998). Due to the inherent nature of the written word in web-based instruction, reading and writing skills are a natural part of any course (Whitesel, 1998). Therefore, it is possible that these skills are more focused on by web-based instructors than was expected.

Additionally, the distance education environment places a great deal of responsibility on the learner for the learning process. Many courses allow students to work at their own pace, and do not have specified due dates for assignments or require online chats and real-time interactions. As Dringus (1999) stated, "learners must become managers of their own learning process and realize an internally focused causality for their learning" (par. 10). Developing appropriate study skills and strategies is one of the goals in this cluster that faculty may feel is essential to becoming a successful student in any environment. Since so much of the responsibility is placed on the learner, is it is necessary to be motivated and have structured study habits in order to succeed as an online learner, making this a very real and important goal for faculty in helping their students be successful.

The majority of the skills in this cluster relate very well to the traditional classroom environment, as well. The basic academic skills of any course would, in a traditional classroom, be inherent in the learning environment, such as improve listening and speaking skills, and improve the ability to pay attention and concentrate. Developing appropriate study skills are also essential in both the traditional and online environment. It is possible that web-based instructors rated certain skills higher in this cluster and traditional instructors rated other skills higher, thereby creating a balance of essential goals and resulting in no significant differences between the groups.

Discipline-Specific Knowledge and Skills

The third research hypothesis stated: There will be no difference in preferences between faculty who complete the TGI for a web-based course and faculty who have taught only traditional courses and complete the TGI for a traditional course for the goal cluster discipline-specific knowledge and skills. The results of the analysis of this goal cluster indicated no significant differences between faculty who taught only traditional courses and faculty who teach both methods and who completed the TGI for a web-based course. This was the expected result and examination of the adjusted means confirmed this finding.

Items in this cluster included goals such as learning the basic facts and concepts of a specific subject, developing the skills and understanding the perspectives central to a discipline, and learning to appreciate important contributions to the subject area. These are goals that center on the skills and information central to the discipline, and would therefore be inherent in a faculty member's goals, regardless of teaching method.

Though research has shown that web-based technology has an influence over various aspects of teaching and learning, such as instructor roles, communication and interaction, content delivery, and assessment strategies, there has been no evidence that the actual material vital to the subject area has been affected (Dillon and Walsh, 1992; Dringus, 1999; Fetherston, 2001; Gillespie, 1998; Hoffman, 2001; LaMonica, 2001; Willis, 1994; Zukas, 1999).

Research has also shown that academic discipline has been a highly influencing factor on teaching goals (Angelo and Cross, 1993; Johnson, 1997; Schwarze, 1996; Swenson, 1997). However, since discipline was controlled for in this study, this variable ceased to pose an issue regarding the effect of web-based instruction on the teaching goals of faculty. It was therefore postulated that faculty in the different groups would have no reason to differ on their preferences in this goal cluster, and this hypothesis was accepted.

Liberal Arts and Academic Values

The fourth research hypothesis stated: There will be no difference in preferences between faculty who complete the TGI for a web-based course and faculty who have taught only traditional courses and complete the TGI for a traditional course for the goal cluster liberal arts and academic values. Results indicated no significant differences between the two groups of faculty stated in the hypothesis regarding the goal cluster liberal arts and academic values. Further investigation of the adjusted means confirmed this finding.

As this outcome was expected, this finding was not a surprise. Similar to the previous goal cluster, discipline-specific knowledge and skills, the goals in this cluster center on core values of the discipline, and there has been no research thus far to show that these values for the discipline are affected in the online environment. Specific goals statements in this area include developing an openness to new ideas, developing a lifelong love of learning, and developing an informed perspective and the capacity to make ethical choices. These are just a few of the goals in this cluster that refer to the basic values of academic discipline, and no differences were expected to be found between these two groups of faculty.

Work and Career Preparation

The fifth research hypothesis stated: There will be no difference in preferences between faculty who complete the TGI for a web-based course and faculty who have taught only traditional courses and complete the TGI for a traditional course for the goal cluster work and career preparation. The results for this hypothesis indicated no significant differences between the groups at the univariate level, thereby confirming the stated hypothesis. An additional study of the adjusted means substantiated this finding, as teachers who have taught using both methods and completed the inventory for a web-based course had an insignificant increase in their adjusted mean (M=3.51) over faculty who have only taught traditional courses (M=3.26).

There are a variety of goal statements in this cluster that are geared toward developing management and leadership skills, such as organizing and using time efficiently, working productively with others, and a commitment to personal achievement. These are skills that are necessary in both the online environment and traditional classroom, but in somewhat different ways. For instance, an instructor may find that developing the ability to work productively with others is an essential goal for their course, yet the way in which this goal is approached may vary significantly. Group projects are one way faculty who teach in a traditional classroom can accomplish this goal, as students can often take part of the class time to meet with their group members on a specific project.

However, in the online environment, this face-to-face meeting is often a challenge for students and instructors, if not impossible. Yet, this does not mean that this goal is any less important. Instructors who teach online have found ways to be creative in meeting this type of goal in order to develop collaborative learning experiences for their students (Fetherston, 2001). These faculty also tend to organize activities more carefully than they would if they were in a traditional classroom, where the verbal and visual exchange of information is easily accessible (Hoffman, 2001; Whitesel, 1998). The skills involved in this goal cluster of work and career preparation are basic to all faculty members, particularly at the community college level where many students may be preparing to enter the workforce after completing their coursework, rather than continuing on to a baccalaureate institution. Consequently, there is no research to conclude that these goals should be different between these two groups of faculty.

Personal Development

The sixth research hypothesis stated: There will be no difference in preferences between faculty who complete the TGI for a web-based course and faculty who have taught only traditional courses and complete the TGI for a traditional course for the goal cluster personal development. Testing of the final hypothesis resulted in a finding of no significant differences between the two groups stated in the hypotheses, faculty who completed the TGI for web-based courses and had experience in teaching both methods and faculty who had only taught traditional courses. Mean differences between the groups confirmed this finding, as web-based faculty had only a slightly higher mean (M=3.21) than traditional faculty (M=3.02), but not enough to be significant.

The items in this cluster focus on goals that affect students in areas of personal development and growth, such as developing a respect for others, creating a sense of responsibility for one's own behavior, cultivating the emotional health and well-being of a person, and a commitment to personal values. Specifically, they emphasize the ability of the student to think for oneself and make intelligent decisions, many of the skills that web-based faculty often try to instill in their students (Fetherston, 2001). As discussed previously, faculty teaching in the online environment often need to develop assessments that test their students ability to synthesize knowledge, rather than traditional assessments based on memorization, and successful activities are more focused on problem-solving . than question and answer (Dringus, 1999; Fetherston; Gillespie, 1998). It is therefore understandable that faculty who teach in the web-based environment would find the goals in this cluster to be essential.

However, there are goals in this cluster that many faculty who teach in the traditional classroom may deem important, as well. Improving self-confidence, for instance, is one goal in this cluster that faculty in a traditional classroom can have a very real impact on, as they can readily assess this information through immediate visual observation of their students' participation and body language. Additionally, cultivating the physical and emotional health and well-being of students are other aspects of personal development that become more important in the traditional classroom than in the online environment, if only for the fact that these are visible to the teacher and student, whereas a faculty member teaching online would have difficult time assessing this without some type of visual confirmation (Graham, Cagiltay, Lim, Craner, & Duffy, 2001; Hoffman, 2001; LaMonica, 2001).

Given these varying goal statements within the goal cluster personal development, it is likely that faculty from both groups preferred goals that were appropriate to their instructional setting. However, the goals that web-based faculty preferred may not have been the same ones that traditional faculty considered essential, thereby creating fairly equivalent mean scores and resulting in no significant differences for this goal cluster.

Additional Findings

Goals of Web-based Faculty

The first additional research question was to describe the goals of faculty who teach web-based courses. Descriptive analyses found that these faculty members had a higher preference for the goal cluster higher-order thinking skills than for all of the other goal clusters (see Table 4.3). The second highest ranked goal was discipline-specific knowledge and skills, followed by work and career preparation, personal development, basic academic success skills, and finally, liberal arts and academic values. All of the goal clusters except one (personal development) were within one standard deviation of the mean, indicating that faculty were very consistent in their preferences for goals, as the means indicate an overall rating between important, a goal you sometimes try to achieve, and very important, a goal you often try to achieve.

It is notable that these faculty preferred higher order thinking skills as their highest rated goal cluster, as many of the goals in this cluster require skills that involve more than simple memorization techniques and elementary skills. These goals require students to develop higher order cognitive abilities, to synthesize knowledge, develop problem-solving skills, and think holistically. These are the same skills that have been reiterated in the literature, in reference to the changes faculty teaching in the online environment need to make in order to become more effective teachers (Dringus, 1999; Fetherston, 2001; Gillespie, 1998; Willis, 1994).

The goal cluster basic academic success skills was rated fifth among web-based faculty. Though faculty still felt this goal was important, it was less important in comparison to the other goals in the inventory. Part of the reason for this low ranking is understood upon examination of the specific goals in this cluster. Items such as improving skill at paying attention, and improving listening and speaking skills are not very applicable to the online environment. Though faculty may have felt these goals were important, they may not have been as crucial in the specific web-based course they were teaching. Developing these skills has been shown in the literature to be one of the major difficulties in adjusting to in web-based instruction, as interaction is limited by the technology in terms of physically seeing and hearing students in the class (Carnevale, 2000; Lynch, 1998; Whitesel, 1998).

Teaching Experience and Status

The second collateral research question asked whether the goals of community college faculty who teach online, web-based courses were affected by teaching status (full-time or part-time) and/or number of years of teaching experience. Additional analysis was conducted on these two variables. Number of years of teaching experience and teaching status, i.e., full-time or part-time status, were used as covariates in the MANCOVA analysis. Results indicated that neither of these covariates had any significant influence on the dependent variables in this study.

Previous research had found mixed results with regard to these two variables in terms of their influence on faculty teaching goals. A study conducted by Fox (1997), in which the instructional goals of part-time and full-time faculty at a four-year institution were compared using the TGI, found that the number of years of teaching experience did have a significant impact on the teaching goals of part-time versus full-time instructors. Fox concluded that faculty members with longer teaching experience tended not to favor two of the goal clusters, higher order thinking skills and work and career preparation, as compared to instructors with less experience.

Research conducted by Swenson (1997) involved a comparison of teaching goals utilizing the TGI between practitioner educators and full-time faculty. Faculty members from a diverse set of institutions were included in this study, including two-year and four-year institutions. Results were consistent with the current study and indicated no significant differences regarding the number of years of teaching experience among faculty. Since both of these studies used teaching status as the independent variable to distinguish between the two groups, comparisons to the significance of teaching status as a covariate were not comparable.

One potential explanation for the differences found in significance related to the covariate years of teaching experience could be in the types of institutions involved in the studies. The current study utilized only faculty from two-year public institutions. Though this same type of institution was included in Swenson's (1997) study, a community college was not included in Fox's (1997) research. This difference in institutional type could account for part of the reason there were different results among the studies with regard to this variable. Another reason is that Fox's study focused mainly on the effect on teaching goals with regard to academic culture, which is a very different premise than this current study. The study conducted by Swenson was more similar in stature and analysis techniques to this one, which involved a comparison between faculty who teach traditional courses and faculty who teach web-based courses.

Comparison to National Study

An additional research question examined how the goals of community college faculty who teach online, web-based courses compared to the goals of faculty in a nationwide sample surveyed in Angelo and Cross's original study conducted in 1993. A comparison of teaching goals utilizing the clusters of the TGI of the current study to Angelo and Cross' (1993) national study was conducted utilizing cluster means for each of the groups involved. Only data from two-year community colleges was used from the national study in an attempt to assert some control over institutional affiliation and avoid effects caused by different types of institutions.

In comparing the results, group means for web-based faculty were higher for each of the goal clusters than those from Angelo and Cross' (1993) sample. Swenson (1997) found similar results in comparing the results of his study of practitioner educators with the national sample of part-time faculty from Angelo and Cross. One possible explanation for this increase could be higher expectations of faculty now than in previous years. The recent call for accountability in education has had many effects on various aspects of education, as discussed earlier in the research. Teachers may feel more accountable, as they have the opportunity to make a direct impact on the students in their classrooms. With increasing accountability comes greater expectations, not only for teachers but for students, as well. Considering all of the goal clusters in the current study were rated higher than in the national study, conducted almost ten years ago, it could be that the appeal to be more accountable has had an impact on faculty to improve overall teaching effectiveness. This is reflected in the higher preferences of teaching goals.

A comparison of the ranking of teaching goals between the current study and the nationwide sample found priorities to be the same. The goals of community college faculty in both studies resulted in the following order of preferences of the six goal clusters in terms of those the deemed most essential: higher order thinking skills, discipline-specific knowledge and skills, work and career preparation, personal development, basic academic success skills, and liberal arts and academic values. The similarities in these preferences support the original findings of the Angelo and Cross study for community college faculty, which theorized that faculty preferred skills that were typical of the type of curriculum that was taught, lending to more basic skills and vocational courses. Another additional finding in the original study and in this current research was the moderately high preferences for student development, due in part to the personal attention faculty at community colleges often offer to their students.

Though significant differences were found between faculty who only taught traditional courses and faculty who taught web-based courses, these two groups had the same rankings in terms of the goal clusters, which were the same as those for Angelo and Cross' (1993) study. While the preferences for the goals have not changed much for community college faculty, the importance of the goals has, as can be seen by the higher mean scores. Along with increased expectations and accountability, there is also a greater awareness of the importance of instructional goals. Faculty who taught web-based courses had, overall, the highest scores of faculty who only taught traditional courses and faculty in Angelo and Cross' study. This could indicate that teaching in this new learning environment has affected they way in which faculty view their objectives for the course, as they become more aware of the adaptations that need to be made in order to accomplish their instructional goals. This concept is discussed further in the following section.

Effect of Web-based Instruction

In all of the teaching goal clusters, faculty who had taught both methods and who completed the TGI for a web-based course rated all of the goals higher than faculty who had taught only traditional courses. Additionally, in all goal clusters but one, faculty who had taught both methods but who completed the TGI for a traditional course rated the goals higher than faculty who taught both methods and completed the inventory for a web-based course. It is possible that the use of technology, specifically web-based instruction, influenced these results and is the reason that faculty goals were somewhat different among the groups. The use of technology in this case could have been a deciding factor in the difference in teaching goals, particularly for those who had experienced both methods and completed the TGI for a traditional course. This points to the possibility that what they have garnered from teaching in the online environment stays with them even when they return to the traditional classroom.

Yet, the question of whether it is the technology that has had an effect on teaching goals, or something else entirely, must be asked. It could be that the use of technology has affected the way faculty view their instructional goals. However, another explanation for the differences in results could be that, in teaching in the online environment, faculty have had to think about their teaching methods and goals in an entirely different way. Teaching in a new environment, regardless of whether it is web-based or not, forces faculty to be more creative and reassess many of their course components, as they are generally not able to use their traditional methods as they exist. It is possible that a change in learning environments has caused this difference in goals, and not necessarily the technology itself.

Fetherston (2001) argued that the challenges to teaching and learning brought on by the online environment are not necessarily unique to the web, but are the same for any new change to learning. In reference to the web, he stated:

> Be it calculator, TV, cassette recorder, videodisc, or computer, its use needs to be tempered with reference to sound pedagogical principles. The Web is the latest in

> a long line of technology which can be used in teaching and learning and it coincides with change at universities in teaching approaches. (par. 35)

It is difficult to ascertain from this study whether the effects on the teaching goals among the groups of faculty were influenced by the technology of the web-based setting, or by the fact that faculty needed to readjust their teaching styles to accommodate a change in the learning environment. Though significant differences were found among groups, further research would need to be conducted to substantiate the exact cause of these findings.

However, the fact that faculty who have taught both methods and completed the TGI for a traditional course generally had higher scores for all of the goal clusters than any other group is a finding of some significance. These faculty have had the experience of teaching in the online environment, yet chose to complete the TGI for a traditional course, indicating a possible preference for this style of teaching. This is also inherent in the higher goal cluster scores. Teaching in the online environment requires faculty to obtain different skills and utilize different strategies in order to effectively accomplish their goals (Barr & Tagg, 1995; Billings, 2000; Fetherston, 2001; LaMonica, 2001). It is most likely that instructors keep these new insights with them when they return to the traditional classroom. Yet, it is how they use these new ideas and techniques in the traditional environment that is noteworthy. Since they have higher preferences for the skills in the TGI, one supposition is that once faculty return to the traditional environment, they use a combination of the teaching strategies and techniques acquired from the traditional environment and those from the online environment. It is this combination of methods that enhances their teaching and contributes to overall effectiveness.

Additionally, since these faculty members have had the experience of teaching in both environments, they have acquired a diverse set of skills. Shifting from one environment to another requires flexibility on their part, and supplies them with a broader set of competencies. It may be that faculty who have returned to the traditional classroom after having taught in the web-based setting are able to adapt better to these different instructional settings and recognize the changes that need to be made to accommodate the various learning environments. As Paulsen and Feldman (1995) stated, these instructors have experienced a "self-awareness" of their effectiveness in different learning environments. By recognizing this and further identifying their teaching goals to assess their performance, these instructors are able to use this knowledge to improve their teaching effectiveness, in both the traditional and web-based setting.

The differences between these groups indicate that there are definite preferences among faculty who teach traditional and web-based courses. Additionally, it suggests that teaching in a web-based environment has an effect on their instructional goals, whether it is simply an awareness of the changes in different learning environments or a profound insight into the need for specific adjustments in teaching goals, strategies, and techniques when shifting from the traditional classroom to the online setting, and back again. This is a significant finding of which faculty themselves may not be fully aware, and one that can lead to considerable improvements in overall teaching effectiveness.

Implications for Practice and Conclusions

In light of recent questions regarding accountability of student learning and teaching effectiveness in higher education, it is important for faculty and administrators at institutions to be proactive in their assessment methods. It is clear that conducting assessments at the institutional level is simply not enough to improve effectiveness and positively impact student learning. These assessments must also be completed at the classroom level, where learning takes place. With the constant changes higher education is experiencing through the use of increased technology and web-based instruction, it is crucial that these changes be recognized so that faculty are able to adjust their teaching methods, strategies, and goals to accommodate new learning environments.

Effective assessment cannot occur without specifically defined goals. The Teaching Goals Inventory has been a valuable tool for faculty to use to successfully assess whether they are teaching what they propose to be teaching and whether students are learning what they should be learning. Though articulating the specific skills and abilities faculty want students to learn through their instruction can be challenging, it assists teachers in understanding how and why they are teaching the way they do. Chickering (1991) refers to the ongoing reflection of strengths and weaknesses in order to improve practices, and states, "Teaching itself is a complex activity. The process of closing the gap between our current practices and those required for maximum learning and retention by the diverse students that we serve is a continuing challenge for all of us" (p.55).

This study has examined the differences in teaching goals among faculty who have taught in a web-based environment and those who have not, in order to assess any differences in teaching goals and ascertain the effect of technology on these goals. Results showed that there were, in fact, differences among the three groups of faculty, indicating that teaching goals were affected by a change in the learning environment. Whether this effect was caused by the web-based setting or by a change in the overall teaching structure is uncertain. However, it is noteworthy that there was a significant effect on overall teaching goals. It is important for administrators and faculty to be aware of this change in instructional goals when teaching in these diverse environments in order to assess the effects of these differences and adjust their teaching methods and strategies accordingly.

Considering that the three groups of faculty were proportionally the same across disciplines, in order to control for any disciplinary effects, the findings from this study become even more powerful. When faculty engaged the technology, i.e., web-based instruction, their level of consciousness regarding teaching goals was raised. This was evidenced by the higher mean scores for faculty who had experience in teaching web-based instruction. The result was not a disciplinary effect, but a pervasive effect on the various teaching goal clusters. Specifically, for faculty who taught web-based courses, a change occurred in their level of awareness regarding their instructional methods and goals, as a significant amount of attention was now being paid to exactly how and what they were teaching. Shifting from the traditional to the online environment may have caused faculty to ask themselves what it was they wanted to accomplish, and conduct an in-depth examination of their teaching from an entirely different perspective.

This is particularly interesting considering the nature of the use of multimedia in the teaching and learning environment. Though the integration of technology into the classroom is often associated with training and more behavioral-type objectives, this study has shown that these faculty members had increased means for the specific goal clusters liberal arts and academic values, higher order thinking skills, and personal development. These goal clusters include areas that go beyond the behavioral into the value-added dimension of learning. Faculty had higher preferences for these goals, goals that surpassed the subject matter and basic academic skills and moved into the specific abilities and competencies learned *through* the content.

Once the technological medium was engaged, expectations, including their own, were raised to a level beyond that of the traditional, classroom-based environment. Additionally, this level of expectation stayed with instructors when they moved from the web-based environment back to the traditional environment, as mean scores were even higher for the goal clusters for this group of faculty. These new expectations and attitudes resulting from this intense examination of teaching goals throughout the different instructional environments transfers with faculty as they transition from the traditional classroom to the online environment, and back again.

The findings from this study can be utilized by many in higher education, specifically by individual academic departments. Examining faculty goals within each academic unit and comparing these results can assist administrators in assessing departmental priorities and identifying whether these priorities are similar. Additionally, it may cause them to reassess how web-based courses are being taught in comparison to traditional, classroom-based courses and identify differences between the two that can be used to improve instruction. If different methods are being utilized in the online environment in order to meet changed goals, perhaps these adjustments can also be used to improve the quality of teaching in the traditional classroom, and vice versa. Providing professional development and training opportunities for faculty on the use of classroom assessment techniques as a result of the identification of teaching goals can assist in addressing concerns regarding instructional techniques and improve overall teaching effectiveness.

Since differences between faculty groups existed in the TGI for faculty who teach for-credit courses, differences may also exist between faculty in other areas of the university, such as those in continuing education or student affairs, where instruction may be taught in learning environments other than the traditional classroom. The TGI could be utilized to assess the congruency of faculty teaching goals throughout various areas of the college, in order to provide a unified curriculum. Additionally, this instrument could be utilized in creating professional development programs for faculty at the institution, and can also be tailored to meet the need of a particular discipline or learning environment.

The results of this study support the findings of other researchers who found that teaching in the web-based environment influences various aspects of teaching, such as course content, assessment strategies, teaching roles, and communication and interaction.

Administrators should provide faculty with the opportunity and resources to assess their instructional goals in order to provide the best possible education for their students. This step can assist teachers in successfully evaluating their teaching effectiveness and improve the overall quality of their instruction in the rapidly changing learning environments of higher education.

Recommendations for Future Research

This study considered the effects of web-based instruction on the teaching goals of community college faculty. In doing so, it has contributed to the field of classroom research and assessment, as well as to the literature on distance learning, specifically in reference to web-based instruction. Upon reflecting on the results of the study, there are a number of recommendations for future research concerning teaching goals and the online environment.

One recommendation should be to replicate this study at a broader community college level in order to confirm findings. Conducting this study at four-year institutions would also be valuable to assess the effect of these different types of institutions on teaching goals, in addition to the effects of web-based learning. Considering the different missions and goals between community colleges and four-year institutions, the approaches to web-based learning may have a varying effect on teaching goals among faculty.

Further research should also be conducted regarding the specific causes of the differences between faculty who have taught both methods and completed the TGI for a web-based course and faculty who have only taught traditional courses. Examining whether differences were caused by the technology of the web-based method or by a need to adjust to changes in their teaching and learning environment, can help to clarify why teaching goals were significantly different.

Conducting a qualitative study or adding a qualitative component to a similar study would assist in obtaining specific information needed to assess the reasons for changes in instructional goals and the effects of technology on these goals. Providing faculty the opportunity to comment on the results of their inventories could assist the researcher in identifying potential factors that affect faculty teaching goals. Additionally, it would allow for a more in-depth analysis of why faculty preferred specific goals over others and how they felt each of the goal statements related to their current instructional environment.

Some recommendations also include suggested improvements for the instrument, the Teaching Goals Inventory (TGI). Every attempt was made to control for external factors in this study. However, ultimately, there were limitations to the research that should be noted. One of the main limitations was with regard to the measurement scales utilized in this study. Content scales, rather than factor scales, were used for the alpha reliabilities and correlation matrix found in Tables 4.2 and 4.4, respectively. The strength of the correlation coefficients was fairly high, indicating a considerable amount of similarity among the scales. A difference in one dimension signified the probability of differences in others, and an underlying factor controlling these variances. In particular, the covariance of work and career preparation and personal development at .744 (see Table 4.4) suggested possible multicolinearity violations. Fortunately, due to the amount of independent variation, this covariance was still within allowable ranges so as not to exceed that set by the assumption.

Due to the potential content validity issues posed here, one recommendation would be to examine the psychometric properties of the instrument, further investigating the internal consistency and content validity through a factor analysis. This step would enable the researcher to gain insight into the underlying structure of the instrument, beyond the content dimensions.

Another issue to be addressed was in reference to the TGI is that the instrument does not factor in the amount of time expended on each goal, as the survey instrument did not address this issue. Rather, it focused mainly on the importance of the goals to the instructor for a particular course. As with any research instrument, there are always areas that could be added or refined, and this particular issue relating to the amount of time dedicated to each goal or goal cluster could be seen as a limitation to the instrument, as well as to the study.

Since this study has revealed differences between faculty groups, another suggestion would be to adjust the TGI for future studies involving new learning environments, in order to be more accommodating to those teaching in settings other than that of the traditional classroom. Specifically, the instrument could be adapted to include goals more correlated to the online, web-based setting. Though this may limit the use of the instrument to those teaching with technology, it may also assist these faculty in further identifying their instructional goals, thereby improving overall teaching effectiveness.

APPENDIX A

Welcome to the Teaching Goals Inventory!

Thank you for taking the time to participate in this study. Once you have read and accepted the informed consent, you will gain access to the inventory. The inventory will take approximately 10 minutes to complete, and must be completed in a single session, so please make sure you have time to complete the entire process.

Upon completion of the TGI, you will have the option to score your results, as well as print out the inventory for future use with other courses.

STATEMENT OF INFORMED CONSENT

I freely volunteer, without undue influence or coercion, my consent as a participant in the research study entitled "Faculty Teaching Goals in the Online Environment."

The study is being conducted by Ms. Kimberly Hardy, a doctoral candidate in the program of Higher Education at Florida State University. I understand the purpose of her research project is to assess the influence of web-based technology on the teaching goals of faculty at community colleges. I understand I will be asked to complete the Teaching Goals Inventory, an instrument that will identify and clarify my teaching goals for a particular class. I understand this activity will take approximately 10 minutes of my time and will be completed online. Upon completing the inventory, I will have the option to self-score the inventory and receive immediate feedback about my teaching goals.

I understand there are benefits for participating in this research project. I will be able to use the Teaching Goals Inventory to identify and assess my personal teaching goals for a particular course. I will also have the option to print a copy of the inventory and self-scoring worksheet for use in my other courses.

All my answers to the questions will be kept confidential to the extent allowed by law. The unique password assigned to me will only be used to account for duplicate responses and completions. My name will not appear on any of the results. No individual responses will be reported. Only group findings will be reported. All information will be stored on the facilitator's personal computer. Data containing personal identifying information, including the list that identifies the password with the user, will be destroyed once they are analyzed, by December 31, 2002.

It is my understanding that my participation is voluntary and that this consent may be withdrawn at any time without prejudice, penalty or loss of benefits to which I am otherwise entitled. The only risks associated with my participation in the study are those associated with ordinary, every day experiences. I may contact Ms. Hardy at khardy@tgiresearch.com if I have any questions about the project. I may request group results when the project is complete.

Please click here to proceed:

I have read and understand this consent form and
agree to be a participant in the project as described,
and I certify that I am at least 18 years of age.

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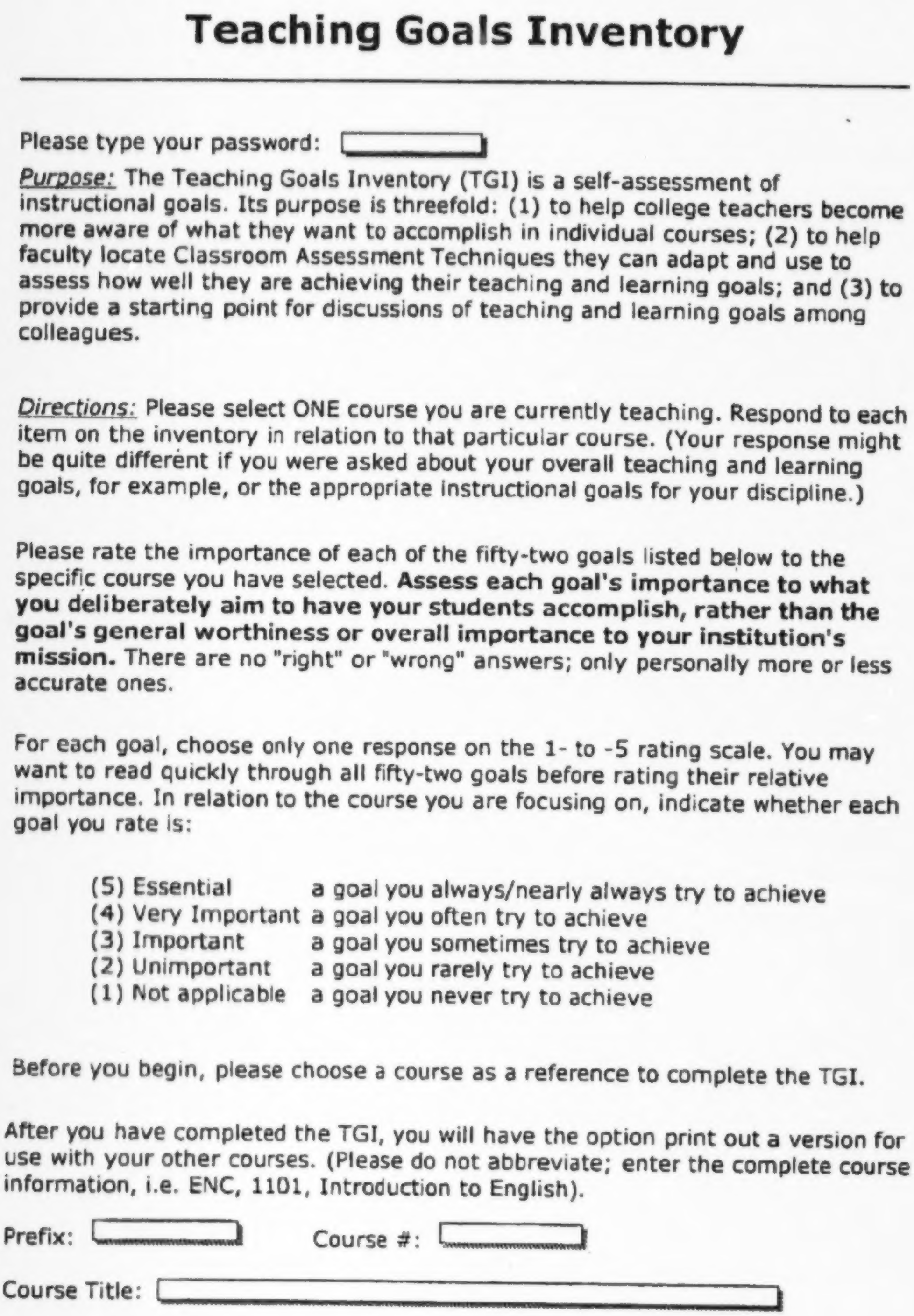

Teaching Goals Inventory

Please type your password:

Purpose: The Teaching Goals Inventory (TGI) is a self-assessment of instructional goals. Its purpose is threefold: (1) to help college teachers become more aware of what they want to accomplish in individual courses; (2) to help faculty locate Classroom Assessment Techniques they can adapt and use to assess how well they are achieving their teaching and learning goals; and (3) to provide a starting point for discussions of teaching and learning goals among colleagues.

Directions: Please select ONE course you are currently teaching. Respond to each item on the inventory in relation to that particular course. (Your response might be quite different if you were asked about your overall teaching and learning goals, for example, or the appropriate instructional goals for your discipline.)

Please rate the importance of each of the fifty-two goals listed below to the specific course you have selected. **Assess each goal's importance to what you deliberately aim to have your students accomplish, rather than the goal's general worthiness or overall importance to your institution's mission.** There are no "right" or "wrong" answers; only personally more or less accurate ones.

For each goal, choose only one response on the 1- to -5 rating scale. You may want to read quickly through all fifty-two goals before rating their relative importance. In relation to the course you are focusing on, indicate whether each goal you rate is:

(5) Essential	a goal you always/nearly always try to achieve
(4) Very Important	a goal you often try to achieve
(3) Important	a goal you sometimes try to achieve
(2) Unimportant	a goal you rarely try to achieve
(1) Not applicable	a goal you never try to achieve

Before you begin, please choose a course as a reference to complete the TGI.

After you have completed the TGI, you will have the option print out a version for use with your other courses. (Please do not abbreviate; enter the complete course information, i.e. ENC, 1101, Introduction to English).

Prefix: Course #:

Course Title:

For what type of course are you completing this inventory?

○ Web-based
○ Traditional

Rate the importance of each goal to what you aim to have students accomplish in your course

---

	Not Applicable	Un-important	Important	Very important	Essential
1. Develop ability to apply principles and generalizations already learned to new problems and situations	○ 1	○ 2	○ 3	○ 4	○ 5
2. Develop analytic skills	○ 1	○ 2	○ 3	○ 4	○ 5
3. Develop problem-solving skills	○ 1	○ 2	○ 3	○ 4	○ 5
4. Develop ability to draw reasonable inferences from observations	○ 1	○ 2	○ 3	○ 4	○ 5
5. Develop ability to synthesize and integrate information and ideas	○ 1	○ 2	○ 3	○ 4	○ 5
6. Develop ability to think holistically: to see the whole as well as the parts	○ 1	○ 2	○ 3	○ 4	○ 5
7. Develop ability to think creatively	○ 1	○ 2	○ 3	○ 4	○ 5
8. Develop ability to distinguish between fact and opinion	○ 1	○ 2	○ 3	○ 4	○ 5
9. Improve skill at paying attention	○ 1	○ 2	○ 3	○ 4	○ 5
10. Develop ability to concentrate	○ 1	○ 2	○ 3	○ 4	○ 5
11. Improve memory skills	○ 1	○ 2	○ 3	○ 4	○ 5
12. Improve listening skills	○ 1	○ 2	○ 3	○ 4	○ 5

13. Improve speaking skills	○ 1	○ 2	○ 3	○ 4	○ 5
14. Improve reading skills	○ 1	○ 2	○ 3	○ 4	○ 5
15. Improve writing skills	○ 1	○ 2	○ 3	○ 4	○ 5
16. Develop appropriate study skills, strategies, and habits	○ 1	○ 2	○ 3	○ 4	○ 5
17. Improve mathematical skills	○ 1	○ 2	○ 3	○ 4	○ 5
18. Learn terms and facts of this subject	○ 1	○ 2	○ 3	○ 4	○ 5
19. Learn concepts and theories in this subject	○ 1	○ 2	○ 3	○ 4	○ 5
20. Develop skill in using materials, tools, and/or technology central to this subject	○ 1	○ 2	○ 3	○ 4	○ 5
21. Learn to understand perspectives and values of this subject	○ 1	○ 2	○ 3	○ 4	○ 5
22. Prepare for transfer or graduate study	○ 1	○ 2	○ 3	○ 4	○ 5
23. Learn techniques and methods used to gain new knowledge in this subject	○ 1	○ 2	○ 3	○ 4	○ 5
24. Learn to evaluate methods and materials in this subject	○ 1	○ 2	○ 3	○ 4	○ 5
25. Learn to appreciate important contributions to this subject	○ 1	○ 2	○ 3	○ 4	○ 5
26. Develop an appreciation of the liberal arts and sciences	○ 1	○ 2	○ 3	○ 4	○ 5
27. Develop an openness to new ideas	○ 1	○ 2	○ 3	○ 4	○ 5

28. Develop an informed concern about contemporary social issues	○ 1	○ 2	○ 3	○ 4	○ 5
29. Develop a commitment to exercise the rights and responsibilities of citizenship	○ 1	○ 2	○ 3	○ 4	○ 5
30. Develop a lifelong love of learning	○ 1	○ 2	○ 3	○ 4	○ 5
31. Develop aesthetic appreciation	○ 1	○ 2	○ 3	○ 4	○ 5
32. Develop an informed historical perspective	○ 1	○ 2	○ 3	○ 4	○ 5
33. Develop an informed understanding of the role of science and technology	○ 1	○ 2	○ 3	○ 4	○ 5
34. Develop an informed appreciation of other cultures	○ 1	○ 2	○ 3	○ 4	○ 5
35. Develop capacity to make informed ethical choices	○ 1	○ 2	○ 3	○ 4	○ 5
36. Develop ability to work productively with others	○ 1	○ 2	○ 3	○ 4	○ 5
37. Develop management skills	○ 1	○ 2	○ 3	○ 4	○ 5
38. Develop leadership skills	○ 1	○ 2	○ 3	○ 4	○ 5
39. Develop a commitment to accurate work	○ 1	○ 2	○ 3	○ 4	○ 5
40. Improve ability to follow directions, instructions, and plans	○ 1	○ 2	○ 3	○ 4	○ 5
41. Improve ability to organize and use time effectively	○ 1	○ 2	○ 3	○ 4	○ 5

42. Develop a commitment to personal achievement	○ 1	○ 2	○ 3	○ 4	○ 5
43. Develop ability to perform skillfully	○ 1	○ 2	○ 3	○ 4	○ 5
44. Cultivate a sense of responsibility for one's own behavior	○ 1	○ 2	○ 3	○ 4	○ 5
45. Improve self-esteem/self-confidence	○ 1	○ 2	○ 3	○ 4	○ 5
46. Develop a commitment to one's own values	○ 1	○ 2	○ 3	○ 4	○ 5
47. Develop respect for others	○ 1	○ 2	○ 3	○ 4	○ 5
48. Cultivate emotional health and well-being	○ 1	○ 2	○ 3	○ 4	○ 5
49. Cultivate physical health and well being	○ 1	○ 2	○ 3	○ 4	○ 5
50. Cultivate an active commitment to honesty	○ 1	○ 2	○ 3	○ 4	○ 5
51. Develop capacity to think for oneself	○ 1	○ 2	○ 3	○ 4	○ 5
52. Develop capacity to make wise decisions	○ 1	○ 2	○ 3	○ 4	○ 5

53. In general, how do you see your primary role as a teacher? (Although more than one statement may apply, please choose only one).

○ Teaching students facts and principles of the subject matter
○ Providing a role model for students
○ Helping students develop higher-order thinking skills
○ Preparing students for jobs/careers
○ Fostering student development and personal growth
○ Helping students develop basic learning skills

54. How many years have you been teaching at the post-secondary level?

○ Less than one year
○ 1 to 5 years
○ 6 to 10 years
○ 11 to 15 years
○ 16 to 20 years
○ More than 20 years

55. Are you considered by your college as a part-time or full-time instructor?
○ Part-time
○ Full-time

56. What is your gender?
○ Female
○ Male

57. Have you ever taught a web-based distance education course?
○ Yes
○ No

58. Have you ever taught a course in a traditional classroom?
○ Yes
○ No

Teaching Goals Inventory
Self-Scoring Worksheet

1. In all, how many of the fifty-two goals did your rate as "essential"? _________

2. How many "essential" goals did you have in each of the six clusters listed below?

Cluster Number and Name	Goals Included in this Cluster	Total Number of "Essential" Goals in Each Cluster	Clusters Ranked – from 1st to 6th – by Number of "Essential" Goals
I. Higher Order-Thinking Skills	1-8	_________	_________
II. Basic Academic Success Skills	9-17	_________	_________
III. Discipline-Specific Knowledge and Skills	18-25	_________	_________
IV. Liberal Arts and Academic Values	26-35	_________	_________
V. Work and Career Preparation	36-43	_________	_________
VI. Personal Development	44-52	_________	_________

3. Compute your cluster scores (average item ratings by cluster) using the following worksheet.

A Cluster Number and Name	B Goals Included	C Sum of Ratings Given to Goals in that Cluster	D Divide C by this Number	E Your Cluster Scores
I. Higher Order-Thinking Skills	1-8	_________	8	_________
II. Basic Academic Success Skills	9-17	_________	9	_________
III. Discipline-Specific Knowledge and Skills	18-25	_________	8	_________
IV. Liberal Arts and Academic Values	26-35	_________	10	_________
V. Work and Career Preparation	36-43	_________	8	_________
VI. Personal Development	44-52	_________	9	_________

Source: *Classroom Assessment Techniques*, by Thomas A. Angelo and K. Patricia Cross. Copyright (c) 1993. Used by permission. Publisher, Jossey-Bass, San Francisco, California.

APPENDIX B

Dear Community College Instructor,

As a graduate student in the Higher Education program at Florida State University, I am conducting a study for my dissertation focusing on the teaching goals of community college faculty. You may be familiar with the Teaching Goals Inventory (TGI) developed by Cross and Angelo in 1993. This inventory assists you, as an instructor, in identifying and clarifying specific instructional goals for a particular class. The TGI is also self-scoring, allowing you to obtain your results immediately, if you choose to, for use with your courses. Specifically, I would like to discover any effects technology has on instructional goals.

As an instructor in one of Florida's 28 community colleges, your participation is crucial and will ensure a thorough review of the teaching goals of faculty for the purposes of this study. The inventory should take approximately 10 minutes to complete. When you have completed the TGI, you will have the option to score your results, as well as be able to print out a copy of the inventory for future use with your courses.

When you get to the Teaching Goals Inventory Page (the second page on the site), type in the password provided below. Please be assured that this code will not be used for identification, but for tracking purposes only. The master list of passwords will be destroyed upon completion of the study.

Password:

To access the survey, view the page identified below in your Web browser (the survey will be best viewed using Internet Explorer):

http://www.tgiresearch.com

The survey will only be available until **Friday, April 19th,** so please visit the website before then. You may feel free to contact me regarding any questions or concerns you may have and I will be more than happy to address any issues. If you would like to receive a summary of results from this study, please indicate this at the completion of the TGI on the website. Thank you very much for taking the time to participate in this study.

Sincerely,

Kimberly Hardy

APPENDIX C

Florida State
UNIVERSITY

Office of the Vice President
for Research
Tallahassee, Florida 32306-2763
(850) 644-8673 • FAX (850) 644-4392

APPROVAL MEMORANDUM
from the Human Subjects Committee

Date: **January 28, 2002**

From: **David Quadagno, Chair** DQ/ph

To: Kimberly Hardy
3217-C Tanager Court
Tallahassee, FL 32308

Dept: Educational Leadership and Policy Studies

Re: **Use of Human subjects in Research**
Project entitled: Faculty Teaching Goals in the Online Environment

The forms that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be exempt per 45 CFR § 46.101(b)2 and has been approved by an accelerated review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals which may be required.

If the project has not been completed by January 27, 2003 you must request renewed approval for continuation of the project.

You are advised that any change in protocol in this project must be approved by resubmission of the project to the Committee for approval. Also, the principal investigator must promptly report, in writing, any unexpected problems causing risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is IRB00000446.

Cc: Beverly Bower
APPLICATION NO. 02.018

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